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A Personalized Approach to Professional Development Through a Community of Practice

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A PERSONALIZED APPROACH TO PROFESSIONAL DEVELOPMENT THROUGH A COMMUNITY OF PRACTICE

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Education in the
College of Education
at the University of Kentucky

By
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2020

ABSTRACT OF DISSERTATION

A PERSONALIZED APPROACH TO PROFESSIONAL DEVELOPMENT THROUGH A COMMUNITY OF PRACTICE

Personalized learning has gained traction in the United States as schools look to improve student learning through means that are less focused on standardized tests and are more focused on individualized student needs (Cavanagh, 2014). To successfully implement a new learning initiative such as personalized learning, high-caliber training must be provided. Research indicates a teacher's expertise and effectiveness account for the most significant difference in student achievement (Ferguson, 2001; Hattie, 2012), and therefore quality teacher professional development is paramount. One way to improve a teacher's excellence and effectiveness is through sustained, collaborative, and meaningful professional development.

In this study, I used a collaborative network within a K-12 school setting as a means to provide high-quality professional development that enhanced conditions for organizational learning. A community of practice was designed, with stakeholder input, to best meet the needs of both teachers and students. The use of a Community of Practice allowed me to provide teachers with an experiential approach to personalized learning as well as to design and test a professional development structure that could be continued in other contextual settings. Using a mixed-methods action-research design, I examined strategies for professional growth and measured self-efficacy to teach in personalized learning environments. The findings from this study suggest that a Community of Practice is a viable model for professional development to help teachers build self-efficacy and find value in the experience.

KEYWORDS: Professional Development, Community of Practice, Personalized Learning, Teacher Self-Efficacy.

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A PERSONALIZED APPROACH TO PROFESSIONAL DEVELOPMENT THROUGH A COMMUNITY OF PRACTICE

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DEDICATION

This dissertation is dedicated to my family, my husband Richard and son Hīnano, for their constant encouragement and support.

This work is also dedicated to my parents, Andrea and Alfred Kaumeheiwa who instilled in me the value of education and fostered a passion and love of learning.

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CHAPTER 1

INTRODUCTION

In this study, I used a collaborative network within a K-12 school setting as a means to provide high-quality professional development to enhance conditions for organizational learning at Nā ʻOhana Schools in Hawaii. Through the implementation of a community of practice (CoP), I embedded elements of organizational learning (e.g., knowledge construction and inquiry) to support teachers in developing their instructional practice in the area of personalized learning. Using a Mixed Methods Action Research (MMAR) design, I investigated a problem of practice, measured the current state of being, designed and tested an intervention focused on professional growth, and recommended a set of next steps.

Study Context

The Ka Pilina site opened its doors in 1996 as an expansion of the larger Nā ʻOhana Schools private school system. Annually, the site serves approximately 1,050 students in grades K-12. Students from various districts on the island and students from various socio-economic levels are represented. There are just over 250 full-time staff members on campus, of which 105 are teaching faculty and grade level counselors.

The school serves an indigenous population base and strives to provide quality services and programs to meet the needs of indigenous children. In addition to a robust curricular focus, the organization also is dedicated to cultivating, nurturing, perpetuating, and practicing indigenous culture, values, history, knowledge, tradition, and story. The district's desired outcomes for an educational system are embedded in indigenous knowledge and values and the development of native leaders who focus on service to

others, to meet the needs of the indigenous community, and to develop as a dynamic and nurturing learning community (K. Thomas, personal communication, September 2, 2016).

A Focus on Improvement

Nā ʻOhana Schools regularly collects data to review the current state of the system as well as to guide improvements. Leaders used one data collection point, in particular, the Successful Practices Network set of three surveys, We Teach, We Lead, and We Learn, to examine gaps between teacher and student perception of the learning environment. Based on the results of the surveys, leaders highlighted a need for better alignment between curricular policy and assessment of student learning as well as a need for improvement in the school environment and morale.

The most significant gap identified was in the assessment of student learning, specifically, rigor. Rigor is defined as the "critical thinking that takes place on a regular basis" (Successful Practices Network, 2016a, p. 5). According to the Successful Practices Network (2016a), a rigorous curriculum should foster high expectations and consist of coursework that goes beyond just understanding to analyzing and evaluating a concept. Student perceptions, however, show the contrary. In 2016 Nā ʻOhana Schools created a gap analysis that highlighted Successful Practices Network survey results. It particular, the school called out the areas where the largest gaps existed. Student belief that standardized testing was the most important thing that students did to assess learning was measured at 89%. Just 14% of teachers indicated that passing tests is the highest academic priority. The gap between student and teacher viewpoints highlights a need for a clearer understanding of rigor and its use within Nā ʻOhana Schools.

Relevant learning opportunities were identified by students as another area of need. The Successful Practices Network listed factors that improve relevance for students as building on prior knowledge, engaging students' curiosity, and creating opportunities for personalized learning (Successful Practices Network, 2016b). Students reported a 31% difference from their teachers in the opportunity and ability to apply what they learn in school to their life outside. This may indicate that students at Nā ʻOhana Schools struggle to make a connection between what they are learning in school and their everyday experiences.

Good relationships are a critical factor for school success (Successful Practices Network, 2016b). However, data from the Successful Practices Network survey for Nā ʻOhana Schools show several areas of concern, specifically around teacher awareness of student interests. Survey results show a 30% difference between how students viewed their teachers' understanding of student academic interests and teacher perception of the academic interests of students. Similarly, there was a 40% gap between students and teachers in teacher awareness of student interests outside of school. These data indicate that stronger relationships can be fostered between teachers and students.

The Executive Vice-President of Education, headmasters, and educational consultants reviewed findings from the Successful Practices Network survey and issued a call for an increase in rigor, relevance, and relationships to better meet the needs of the students at Nā ʻOhana Schools. In particular, results from the survey indicate students' desire to be engaged by a curriculum that has real-life application and relevancy. In response, leaders at all levels of the institution agreed that a curriculum enhanced by

personalized learning experiences would best meet the needs of the school moving forward.

A New Tactical Plan

The goal for Nā ʻOhana Schools is to become a world-class education system that provides students with a culturally grounded, personalized educational experience. Findings from the Successful Practices Network survey influenced the implementation of a new tactical plan at Nā ʻOhana Schools, with four key points to address the need for a departure from an over-reliance on standardized testing to a focus on more rigorous and relevant learning opportunities for students. The four key points of the tactical plan include: (a) engaging students through personalized learning opportunities; (b) empowering educators; (c) redesigning the learning environment; and (d) elevating standards (K. Thomas, personal communication, September 2, 2016).

Of particular importance to this study is point one of the tactical plan, being engaging students through personalized learning opportunities. The organization provides the following working definition of personalized learning: "the design of diverse learning experiences that consider the learner's strengths, needs, and interests to foster the learners' voice, choice, and agency" (M. Wong, personal communication, November 15, 2016). The working definition contains four elements that should be included when implementing personalized strategies in the classroom as listed and defined in Table1.1.

Table 1.1

School Definition of Elements that Support Personalized Learning

Element	Definition
Learner Centered	Learners make choices around what, when, how, and why they learn to promote voice, choice, and agency. Learners are self-directed and supported in making decisions about their own learning.
Relevant and Appropriate	Choice in content, process, and products are provided for learners through varied instructional strategies and flexible learning pathways. Competency-based progression and demonstration of mastery through clearly defined goals should help learners advance.
Flexible Learning Environments	Design of the learning environment is driven by student needs and responds to and adapts to support learners in achieving their goals.
Relationships & Collaboration	Relationships are at the center of learning. All stakeholders work together to set goals and co-design learning experiences to meet the needs of learners. Community and global partnerships are leveraged to impact learning.

In addition to the working definition of personalized learning, Nā ʻOhana Schools has several guidelines for implementing personalized learning (J. Wong-Kam, personal communication, June 6, 2018). The guidelines were written in a way that provides a simple framework for each campus but allows for autonomy and personalization in the way that each site carries out the recommendations. The guidelines include a focus on: (a) designing personalized professional learning opportunities; (b) calendaring time for articulation to support personalized learning, collaborating on interdisciplinary deeper learning projects, sharing teachers' experiences, and design curriculum; and (c) developing hiring practices that support the recruitment of teachers that support the new direction of the school.

As a result of the survey, leaders at the Ka Pilina site wanted to develop personalized professional learning opportunities for the faculty. However, there was a

need to determine which model of professional learning might best support a personalized approach to professional development. Due to the difference in pedagogical style of personalized learning from current classroom structure, campus leaders also wanted to find a method of group learning that helps to lay the groundwork for organizational learning. Therefore, the focus of this study was to identify a model that supported teachers as they learned about and implemented pedagogy that promotes personalized learning in their classrooms.

Leadership Roles and Responsibilities

At the Ka Pilina site of Nā ʻOhana Schools, support personnel are provided to help faculty members with professional growth and coaching to assist them in developing high-quality classroom instruction. These positions include curriculum coordinators, instructional observers, and instructional technology specialists (ITSs). The curriculum coordinators focus on standards integration and content development. They work with teams of teachers to ensure alignment and articulation of content and standards across all grade levels. The instructional observer is a coach who observes a teacher in the classroom and works with the teacher to improve pedagogical practice. The role of an ITS is to coach faculty on the integration of technology in the curriculum and provide related professional learning opportunities within their assigned division. The ITS spends the bulk of their time developing lessons and units with teachers, training teachers on the use of software and technology tools, and researching new technology trends and best practice. In addition to those responsibilities, a senior ITS leads the campus-based ITS team in coordinating cross-divisional professional development sessions, facilitating support workshops, and planning and implementing community events (i.e., advancement

credit courses, workshops, resource and tutorial development, technology conferences, etc.).

Position as Insider in Context of Research

Action research is often conducted by organizational insiders who desire to deepen their reflective practice and the convenience of studying their site (Anderson & Herr, 2005). Tacit knowledge of the organization from the insider motivates and empowers the insider to bring about organizational change. As a senior ITS, my role in this study was to lead the facilitation and implementation of a new professional development program that encouraged teacher networking and collaboration. I coached participants as they began to learn, explore, and incorporate personalized-learning models in their classrooms. This role allowed me to transition smoothly into the role of the researcher in the context of this study as my function within the professional development program was similar in style to the coaching skill set that the ITS role requires.

As an insider, my role was to support professional learning from within the CoP and assess the effectiveness of the CoP in improving teacher efficacy for personalized learning and perception of organizational learning within the school. As a leader, my responsibility was to plan and facilitate the professional learning within the CoP as well as maintain open communication with stakeholders. It was also my responsibility to ensure data collected were both reliable and valid. I also ensured that participant safeguards were in place and the appropriate permissions were obtained.

Problem of Practice

The term personalized learning has gained traction as schools in the United States look to improve student learning through means that are less focused on standardized measurements and are more focused on individualized student needs (Cavanagh, 2014). According to the National Educational Technology Plan (Department of Education, 2016), personalized learning is defined as:

> Instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner. Learning objectives, instructional approaches, and instructional content (and its sequencing) may all vary based on learner needs. In addition, learning activities are made available that are meaningful and relevant to learners, driven by their interests and often self-initiated. (p. 7)

Several studies extol the benefits of implementing a personalized learning approach in classrooms. For example, Jenkins et al. (2016) contended that personalized learning allows students to deepen their knowledge and skills in a way that is relevant to their context and learning needs so that students self-motivate to thrive in a constantly changing environment. Osborne (2016) reported above average performance of students on standardized tests at Summit Public Schools, a school that integrates personalized learning approaches. Similarly, the RAND Corporation (Pane et al., 2015) study indicated that students attending schools that implemented personalized learning showed an improvement in content knowledge, specifically in the subjects of math and reading.

Another impact of personalized learning is an increase in self-efficacy (Nagle & Taylor, 2016). Nagle and Taylor (2016) found that when students understand their values, they are better able to relate to the curriculum. The use of goal setting, reflection, revision, student voice, and assessment in the learning plans fostered the development of social-emotional learning skills and a growth mindset.

Various school factors can help or hinder the success of any new learning initiative in schools. However, research indicates a teacher's expertise and effectiveness accounts for the most significant difference in student achievement, with as much as 40% more than other measured factors (Hattie, 2012). Hattie (2012) stated that that while almost all things done in the name of education can improve student achievement, excellent teaching is the single most powerful influence on student achievement. Areas with the most significant effect size were feedback, instructional quality, direct instruction, and remediation. Hattie distinguished between excellent and experienced teachers through three dimensions. Excellent teachers present a greater degree of challenge to students, use a higher level of abstraction, and monitor and provide careful feedback. While content knowledge is important, these three dimensions underscore the importance of pedagogical content knowledge.

One way to improve a teacher’s excellence and effectiveness is through sustained, meaningful professional development. However, Darling-Hammond and McLaughlin (2011) found that traditional forms of professional development such as sit-and-get sessions or a one day training with no follow up, are not enough to sustain lasting change. Thus, for the current study, it was imperative that teachers received training and support for the effective implementation of new pedagogical knowledge in personalized learning through a sustainable medium that encouraged growth towards that of a learning organization.

While professional development can be an effective approach to implementing new strategies and behaviors, a change in norms in addition to a change in behavior is needed for systemic change (Collinson & Cook, 2007). If an organization hopes to embed

new thinking and practice to transform the system in ways that support its vision and goals, an organizational learning approach should be used. This deliberate approach to learning shows that the organization is proactive rather than reactive and demonstrates that the organization is looking for opportunities to "detect and correct errors, encourage innovation, and examine mismatches between expectations and actual outcomes" (Collinson & Cook, 2007, p. 9).

Sergiovanni (1994) described schools as rational institutions with linear lines of communication, a chain-of-commands, hierarchy, and formal rules and regulations. Scribner, Cockrell, Cockrell, and Valentine (1999) suggested that schools build a professional community through organizational learning to transform from a rational institution to that of a learning organization. The development of this community is linked to organizational culture whereby the elements of culture shape the groups' thoughts, perception, and behavior ultimately strengthening organizational learning (Schein, 2004).

The new tactical plan at Nā ʻOhana Schools illustrates the school's desire for transformation. For the transformation to be embedded and sustained, there needs to be a focus on organizational learning as an approach to adapting to changing demands. More than just establishing a vision and issuing directives, leaders must support and encourage learning at the individual, group, and organizational levels so that learning, efficiency, and ultimately, the intended transformation, can take place (Collinson & Cook, 2007). This deliberate process of learning involves active problem-solving by members instead of the complacent acceptance of the standard application of traditional methods of education reminiscent of the Industrial Age.

Challenge of Leadership Practice

Nā ʻOhana Schools created opportunities, developed support roles, and built a large bank of relevant research behind the transformation to provide a world class education for students, through the four goals outlined in the tactical plan. More than just providing resources and support for the training, each site within the Nā ʻOhana Schools system must look at developing an organizational culture that reflects the values of the school if the change is to be sustained. Therefore, it is important to understand the unique needs at each site.

Further analysis of data from the Ka Pilina site specifically indicated that both leaders and teachers felt a strong need for professional learning opportunities focused on personalized learning. Additionally, leaders voiced a desire for a program that would foster community and lead to a culture of learning, as the nature of personalized learning requires systematic support, not pockets of adaption. Thus, another need that emerged was to see if the use of a CoP for personalized professional development can also change teacher perception of organizational learning to foster the desired culture of learning expressed by leaders. The specific details of the teacher survey and leader interviews will be provided in the discussion of the Diagnosing Phase in Chapter 2.

As Arqyris and Schon (1974) explained, an organization that learns is one that can detect and correct errors, adapt to change, and improve its effectiveness. Purposeful interaction is an essential component for continuous improvement, and the degree to which change occurs is strongly related to teacher interaction with each other (Fullan, 2001). For organizational learning to be effective at the Ka Pilina site, there needs to be a high level of teacher interaction, through a professional community that creates a shared

vision and culture for improvement. The use of a CoP was recommended as a venue to increase the potential for organizational learning at the school.

Significance of the Study

In this study, I implemented, observed, and gathered data on a CoP focused on personalized learning. The model of CoP was decided based on data collected and analyzed in the Reconnaissance Phase. The CoP was designed in concert with stakeholders to meet the need to better support student learning through more rigorous, relevant, and relationship-focused endeavors as identified in the school issued Successful Practices Network survey. The use of a CoP allowed me to provide teachers with an experiential approach to personalized learning as well as to design and test a structure for professional development that could be continued in other contextual settings. Traditional forms of professional development are not enough to sustain lasting change (Darling-Hammond & McLaughlin, 2011). Professional development shaped by organizational learning can be used to create educational reform. CoPs are one method that allows for knowledge sharing and creation (Wenger, McDermott, & Snyder, 2002).

I hoped that by allowing teachers to experience personalized learning for themselves and providing opportunities to share their voice in the development of the implementation plan, they would be more invested in the approach and have a better conceptual understanding of how it might be applied to their courses. Additionally, I anticipated that the self-advocacy that teachers employed when participating in the intervention would lead to greater self-efficacy in not only their ability to use personalized learning approaches in their classroom but to influence others in the use of personalized learning. Due to time constraints, I did not measure the impact of the CoP

on student learning, but a goal I have is that it can be the focus of a future research project.

The findings of this study contribute to the current body of knowledge on the use of a CoP for professional learning by offering data on teacher efficacy to lead change thereby enhancing organizational learning. This study also contributes to the knowledge base surrounding personalized learning in the context of professional development. While previous studies have shed light on the success of personalized learning with student learning improvement (District Reform Support Network, 2016; Nagle & Taylor, 2016; Pane et al., 2015), little research exists on the impact of a personalized learning approach for professional development and teacher efficacy.

Literature Review Around Intervention

The purpose of the literature review is to describe the empirical research currently available in the following areas of study: professional learning, the development of organizational learning, learning communities, personalized learning, and barriers to successful implementation of personalized learning. The original intent in searching for research on professional development was to link the use of CoPs to good practice for professional learning explicitly focused on personalized approaches. However, research in the field of personalized learning for teacher professional development is limited. Therefore, I expanded my focus to professional development that has the ability to foster organizational change, the type of systemic change needed for personalized learning to be embedded in a school system. I arranged the literature review in two broad categories. The first category is learning communities for transformational professional

development. The second category is the benefits of personalized learning in today's schools.

This section begins with professional learning and the fundamental assumptions of organizational learning in schools. Collinson and Cook (2007) asserted that in order for organizational learning to take root the following assumptions must be present: inquiry is crucial, learning is dependent on the shared understandings of the group, and that those shared understanding can promote the growth of the organization. Collinson and Cook's assumptions demonstrate the need for ongoing collaboration in professional development. The need for a social and collaborative approach to professional development can be manifested in various group learning endeavors.

The contextual need of this study is personalized learning. The personalized learning approach requires a drastic change in the environment of a traditional school. It requires a setting that offers a challenging learning environment for all students, one that encourages them to address new challenges and invent new ideas and practices that are relevant to each individual student. To shift an entire organization to personalized learning transformative professional development that promotes the growth of organizational learning is needed. In the second strand of the literature review, I provided an overview of personalized learning, then shifted to an analysis of implementation results that set the stage for the role that personalized learning has played in schools thus far. As more schools look to implement personalized learning strategies, there is a need to understand barriers to successful implementation of the approach. Barriers identified include a lack of training for teachers, operational issues, and a need for resource support.

Professional Learning in Organizations

Organizational learning is a concept that can be used to facilitate a change in the environment, explore innovative ideas, and implement strategies that address the needs of the school community at large (Collinson & Cook, 2007). Productive organizational learning allows schools to transform themselves and as a result, they are better able to respond to external challenges. Organizational learning is used to encourage personal mastery, developmental models, create a shared vision, foster team learning, and emphasize systems thinking (Senge, 1990). Through a culture of learning, both individuals and the entire organization are encouraged to increase their knowledge and competence to support the attainment of organizational goals, innovation, and success. In the case of the study, the environmental change is one from a traditional approach to education to a personalized approach.

Organizational learning. Collinson and Cook (2007) defined organizational learning as the "deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organization in ways that support shared aims" (p. 8). Successful organizational learning occurs when members create new knowledge and process driven learning experiences that produce cognitive and behavioral change, subsequently becoming embedded as new norms or routines. The collective knowledge generated creates dependencies on the development of new insights and understanding by members, and ongoing renewal becomes a constant goal.

Collinson and Cook (2007) provide a framework for organizational learning in schools that consists of the following: (a) multilevel learning, (b) inquiry, (c) shared

understanding, (d) behavioral and cognitive change, and (e) embedding new knowledge. Within the school, learning must take place at all levels. Self-directed learning of technical skills might take place at the individual level, sharing of instructional strategies at the group level, and encouragement by administrators to present at a system-wide conference, at the organizational level. The use of inquiry at each of the levels supports growth and leads to the generation of creative solutions. As members share ideas, insights, perceptions, experiences, and questions, the new knowledge formed guides behavior and decision making as members are actively learning or relying on past learning. Behavioral and cognitive change within the school then manifests through refining teaching models and curriculum so that students must apply what they know. Finally, as organizational learning takes hold, new theories of action or routines are embedded within the organization and become a part of its memory.

Organizational learning is more than the sum of knowledge held by individuals (Senge, 1990). Organizational learning is the collective intelligence of the organization that is established through collaboration that builds shared language, mental models and provides multiple perspectives to accomplish a shared vision. In practicing organizational learning, Collinson and Cook (2007) recommend that leaders learn to balance leading from the front as well as from behind. When leading from the front, leaders should teach, model, advocate, and cheerlead. When leading from behind, leaders need to create opportunities for both individual and organizational growth and allow for collective inquiry and dissemination. Leaders can promote a culture of professional learning through this development of both individuals and the collective for organizational improvement.

As leaders look to create a culture of learning to help individuals improve, as well as the collective group, they must move beyond traditional forms of professional development that focus merely on the acquisition of knowledge and skills to a communicative, reflective, and collaborative approach that generates new knowledge for the organization (Darling-Hammond & McLaughlin, 2011). An emphasis on an organizational approach to learning must be used to create the appropriate structure to support the educational reform. Conventional methods of professional development must be replaced by opportunities for knowledge sharing as well as the ability to connect their learning to the context of their teaching. Structures that empower teachers and provide an arena for collaboration and thinking through the design of new standards of practice are necessary, as are opportunities for learning both inside and outside of the school. For many, this educational shift exists in a form that is not only unfamiliar with regards to teaching but is one that they had not experienced themselves (Nelson & Hammerman 1996).

Linking social and organizational learning. Lave and Wenger (1991) asserted that the acquisition of knowledge alone could no longer be equated to learning. Instead, they argued that learning should "focus [on] the relationship between learning and the social situation in which it occurs" (p. 14). A qualitative case study by Arnell (2014) highlighted the benefits of teacher participation in learning communities. The research findings confirmed that participation in learning communities enhanced teaching, in particular through the increased use of classroom technology. Teachers reported an increase in productivity as a result of sharing knowledge and resources with other teachers in the community. Collaboration with peers and experts in the online community

increased the likelihood that teachers would refine their instructional practice. Engagement with experts and practitioners resulted in the creation of specialized, collaborative environments in which teachers were able to create new knowledge and experience authentic learning.

Kearney and Zuber-Skerritt (2012) conducted a qualitative study to see if there was a relationship between organizational learning and learning communities. The authors implemented a leadership development program to help community members help themselves through life-long learning. Data collected from participant feedback and evaluative comments indicated attitudes associated with positive personal change, empowerment, motivation, collaboration, and teamwork. The researches also stated that participation in the community increased and leadership in the community was self-sustained by study participants. The researchers correlated the transformational learning statements of the participants and the continued growth of knowledge with elements of a learning organization.

With a specific focus on social learning in schools, Darling-Hammond (1993) also emphasized the need for social learning in professional development programs. She stated that teachers need professional development opportunities that allow them to collaborate with other teachers. Through school observations, Darling-Hammond learned that those that discussed ways in which teaching practices were effective for students showed academic results faster than schools that did not. Darling-Hammond highlighted the need for teachers to be able to consult on problems of practice in the classroom, to share what they know, and observe colleagues teaching. While Darling-Hammond, recommended the use of professional learning communities (PLCs) to develop the

professional understanding of teachers further, another method for collegial collaboration and sharing in the realm of professional development is through CoPs.

Both PLCs & CoPs support the development of organizational learning in a system. Wenger-Trayner and Wenger-Trayner (2015) described CoPs as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (p. 1). In contrast, PLCs are defined as groups of teachers that are organized around collective inquiry, as teams work interdependently to achieve common goals that impact their classroom practice linked to the purpose of improved learning for all students (DuFour, DuFour, Eaker, & Many, 2006). PLCs are focused on the action and assessment of the intervention. In contrast, COPs allow for more of a focus on teacher learning through joint problem solving, seeking information as well as experience, shared resources, coordination of time and resources, discussion and dialogue, documenting projects, and mapping knowledge and identifying gaps (Wenger-Trayner & Wenger-Trayner, 2015). There is also variation in membership and leadership roles, as well as in the ways they support organizational learning and knowledge sharing. A summary of the differences between CoPs and PLCs is provided in Table 1.2.

Table 1.2

Comparison of PLCs and CoPs

	CoP (Saint-Onge & Wallace, 2003; Wenger, McDermott, Snyder, 2002)	**PLC (Dufour & Eaker, 1998; Hord, 2004)**
Membership	Voluntary Can include outside community members	Automatic for faculty members Is limited to school faculty
Leadership	Leadership is shared and informal	Principal driven, may eventually be transferred to leaders within the team
Organizational Culture	Shared vision Values trust Collaborative Developed from within the community	Shared vision Value driven work Collaborative Student focused/results driven
Knowledge Sharing	Community members collaborate and build knowledge Knowledge is shared within the organization and can be shared with the community at large	Team members collaborate and build knowledge from within Knowledge is not necessarily shared with the rest of the organization

Note. Adapted from "Professional learning communities and communities of practice: A comparison of modes, literature review," by S. S. Blankenship & W. E. A. Ruona, 2007. Retrieved from http://files.eric.ed.gov/fulltext/ED504776.pdf

For this study, the focus was on the use of CoPs to support professional development and enhance the perception of organizational learning in the school. The selection of a CoP as opposed to a PLC was due in large part to the membership and leadership requirements of a PLC. Membership in a CoP is voluntary and members can recruit others that they feel will add benefit to the community, whereas membership in a PLC is delegated. Leadership in the CoP is informal and shared, while leadership in a PLC is primarily principal driven. These two factors supported my desire for the CoP in my intervention to be voluntary and teacher driven.

Communities of practice to support professional development and organizational learning. Wenger-Trayner and Wenger-Trayner (2011) support the cultivation of CoPs so that teachers can move from being isolated practitioners to provide their students the benefit of pedagogy and creativity resulting from sharing of the whole community. Wenger-Trayner and Wenger-Trayner stated that the benefit of using CoPs in organizations is that it provides a way to involve practitioners in managing the knowledge they need to do their work both individually and collectively. This results in the development of strategies that work towards the achievement of organizational goals. Additionally, CoPs develop a shared meaning, engage in knowledge building and learning for the organization, are open and transparent, and foster trust (Pandey & Dutta, 2013).

Three main components define a COP and set it apart from the broad definition of a social group. These components are domain, community, and practice (Wenger, 1998). The domain reflects the shared interest and commitment of the members to the domain. It is reflective of the values and goals of the group. The community is the interaction of members as they engage in discussion, learning, and the cultivation of strong relationships. The practice includes the information that the group creates and shares. The creation and perpetuation of COPs in an organization are often organic and self-sustaining due to the value that members find in learning together.

As members in the CoP inquire, interact, learn together, share information, build relationships, and share resources and practice, they begin to engage in some of the foundations of organizational learning (Collinson & Cook, 2007; Wenger-Trayner & Wenger-Trayner, 2015). Organizational learning also requires the sharing of ideas,

insights, perceptions, experiences, and questions, to develop new knowledge (Collinson & Cook, 2007). Behavioral and cognitive change within the school manifests through refining teaching models and curriculum so that students must apply what they know. CoPs developed to meet the specific challenges of schools can affect educational practice (a) internally through learning and practice around subject matter, (b) externally as schools connect students to relevant experiences and participation in the broader community outside of the school, and (c) over the lifetime of students by providing them with the skills and education that meets their needs beyond their attendance at the school (Wenger-Trayner & Wenger-Trayner, 2015). This too is evidence of organizational learning as new theories of action or routines are embedded within the organization. They take hold and become a part of the school's memory.

Leithwood et al. (1998) conducted a study of 14 schools to identify conditions that foster organizational learning in schools. The 111 teachers interviewed noted conditions both inside and outside of the school that improved individual and collective professional learning in their schools. Of the five conditions identified, three are of particular interest to this study: culture, school structure, and school resources. In terms of school culture, a collaborative and collegial culture resulted in the informal sharing of ideas and resources for continuous professional growth. In terms of school structure, schools that supported organizational learning allowed for greater participation in decision making, informal problem-solving sessions, flexible schedules, regular professional development, and provided time for teachers to work together. In terms of school resources, these areas help foster organizational learning: community facilities, access to curriculum, technology, and support, as well as the use of other teachers for

assistance in professional development. Many of the outputs discussed in the results of the Leithwood et al. (1998) study can be achieved through the ability of a CoP to foster interaction, collaboration, resource sharing, group problem-solving, and flexible membership criteria.

In addition to fostering organizational learning, CoPs can serve as meaningful and valuable professional development for teachers. Duncan-Howell (2010) conducted a study of three online learning communities for teachers to determine their potential as a valid source for professional development. Just over 86% of participants in the study found their participation in the online communities to be a meaningful form of professional development. Additionally, 77% of respondents felt that a change in their classroom practice was a result of their participation in the community. Respondents listed the advantages of participating in the community as the relevancy of content, authentic learning, an immediacy of learning, collaboration with colleagues, discussion with peers, and the ability to participate when it was convenient for them.

Findings from a study by Beauchamp et al. (2014) echoed the results of the Duncan-Howell (2010) study in that the most valuable professional learning experiences for teachers involved collaboration with colleagues. Beauchamp et al. noted that collaboration was the strongest influence on both self- and collective-efficacy of teacher participants. Beauchamp et al. used Bandura's framework on social cognitive theory to define and develop the methodology for the study. As a result of their survey of 800 teachers and interviews with 400 teachers, Beauchamp et al. made the following recommendations for collaborative professional development to increase self-efficacy: (a) provide teachers with autonomy and choice to increase self-efficacy, (b) provide time and

space for collaborative professional development to build collective efficacy, (c) use cohorts to tailor professional development to meet the needs of teacher groups of varying levels, (d) ask teachers to collaboratively determine their learning needs to become better teachers and to connect these developments to better meet the needs of their students, and (e) allow for professional development around sharing curriculum ideas and best practice, co-creating, and sharing resources and strategies.

Beauchamp et al. (2014), Duncan-Howell (2010), and Leithwood et al. (1998) each gave provided a base of empirical evidence of the benefits of collaborative approaches to professional development, in terms of autonomy, relevancy, authentic learning, group problem solving, resource sharing, and self-efficacy. CoPs are one example of a collaborative style of professional learning. Work in the field has indicated that CoPs can serve the needs of schools that implement organizational learning through a shared vision, collaboration, relationships, shared knowledge, and the creation of new knowledge. It is through organizational learning that systemic change occurs, and it is systemic change this required for a successful implementation of any change initiative in a school. In the case of this study, the need for personalized learning opportunities drives the need for systemic change, supported by organizational learning, via a CoP.

Personalized Learning in Schools

The World Economic Forum (2016) estimated that 65% of students who entered grade school in 2016, will work in jobs that do not yet exist. Wagner (2017) identified seven skills needed for jobs of the future: critical thinking and problem solving, collaboration across networks, adaptability, entrepreneurship, effective communication skills, ability to analyze information, and curiosity and imagination, none of which are

measured on standardized tests. While there is a need to prepare students to meet the future workforce demand, by enlarge, the focus of education in the United States is still based on legislation that promotes success on standardized measures (Ornstein, 2010). Ornstein (2010) pointed out that the focus on tests scores over the last 40 years has caused the gap between students from the United States and their global counterparts to widen, with American students on the declining end. Thought leader Tony Wagner (2008) noted that schools in the United States are obsolete and in need of school reform via teaching students to learn how to learn, rather than just memorize facts and formulas. Instead, students must actively participate in the creation of their own learning, to build skills that support the flexibility and mindset required for success in today's workforce. Personalized learning allows students to deepen their knowledge and skills in a way that is relevant to their context and learning needs by encouraging them to communicate clearly, solve problems creatively, find and use information, and self-motivate to thrive in a constantly changing environment (Jenkins et al., 2016).

Patrick, Kennedy, and Powell (2013) conducted a scan of the literature to expand the knowledge base in the field of personalized learning, blended learning, competency-based education, and standards, specifically to explain the interdependencies of all four. In terms of personalized learning, the authors identified the top ten essential components of personalization, according to educators in the field. Included in the list are the need for student agency, flexible pace, space, deeper learning, and standards-based, world-class knowledge and skills. Benson (2013) also identified a working list of four attributes for personalized learning models. They include learner profiles, personal learning paths, individual mastery, and flexible learning environments. Patrick et al. (2013) suggested

using blended learning as a tool to support personalization. This personalization should be bolstered through competency-based education that provides meaningful assessment opportunities that demonstrate mastery of concepts and skills based on academic standards and competencies that meet the demands of a global society. The next section of the literature review contains examples of personalized learning in schools in the United States, which successfully incorporate the elements of personalized learning in varying degrees.

Personalized learning in the United States. As schools in the United States adjust to accommodate the changing needs of the workforce (World Economic Forum, 2016), some schools have been experimenting with personalized learning (Bray & McClaskey, 2017; District Reform Support Network, 2016; Osborne, 2016; Pane et al., 2015). In personalized learning settings, objectives, content, and pace are student driven. Personalized learning is meaningful and relevant to the learner and often uses technology to facilitate learning and provide individualized lessons and assessments to individualize instruction further.

To further the exploration of personalized learning in schools, the U.S. Department of Education (2014) awarded approximately $500 million in Race to the Top grants to districts to build personalized learning programs unique to their district needs (District Reform Support Network, 2016). The U.S. Department of Education (2014) commissioned case studies for four of the participating districts; the results of which were made available in a 2016 report. Data points for the study were gathered via classroom observations, focus groups, and meetings with participating adults from each district. The methods used for the implementation of personalized learning in each district, while

customized for each location, had the following commonalities: (a) the engagement and empowerment of the school community at large; (b) blended learning; (c) individualized learning plans; and (d) mastery-based assessment. The methods were enhanced using four of the five commonly identified personalized learning approaches: (a) heightened technology integration; (b) teachers as academic support for students; (c) functionally redesigned learning spaces; (d) the use of data to inform instruction; and (e) an emphasis on developing soft skills for continued learning.

Teachers from all four districts participating in case studies involving personalized learning for the Race to the Top grants reported increases in positive classroom behavior and student engagement (District Reform Support Network, 2016). Through surveys, students reported an increase in technology knowledge and collaboration as well as the likelihood that students would persist longer when faced with challenging tasks. Reports of an increase in student effort and content knowledge gained through math centers that delivered content via a personalized learning approach also prevailed.

Academic gains. Researchers from the RAND Corporation were commissioned by the Bill and Melinda Gates Foundation to conduct a longitudinal study on foundation-funded schools that implement promising approaches in personalized learning (Pane et al., 2015). Researchers collected achievement data from 62 charter and district schools and discussed the results in a report titled *Continued Progress: Promising Evidence on Personalized Learning*. Similar to the Department of Education report (2014), the findings of the RAND Corporation study indicated that students attending schools that implemented personalized learning showed an improvement in content knowledge,

specifically in the subjects of math and reading. The student scores from participating schools exceeded those of the comparison group students. After two years of participating in the program, student achievement scores in both math and reading on the Northwestern Education Association Measures of Academic Performance test jumped approximately 3 percentile points, to place students above the national average (p. 4).

Osborne (2016) researched Summit Public Schools, a 6-12 charter school dedicated to personalizing learning for its students. Osborne noted that in the personalized learning-based curriculum environment provided by Summit Public Schools, students have an above average performance on standardized measures. According to their website, Summit Public Schools "flip the traditional adult-driven school model on its head by putting students at the center and creating an environment that enables students to drive their own learning" (Summit Public Schools, 2017, para. 2). As of 2016, Summit Public Schools served approximately 2,000 students in grades 6-12 at seven locations.

While students at Summit Public Schools arrive with slightly lower scores compared to other local area high schools, Summit Public Schools posts higher scores on the Academic Performance Index (Osborne, 2016). For example, in 2012, students at the Summit Public Schools' San Jose location scored 835.5 on the Academic Performance Index as compared to a score of 752 for the California state average. The Northwestern Education Association Measures of Academic Performance test results for Summit also show above average gains. In the 2014-15 school year, students that entered Summit Public Schools behind grade level, in the bottom 20%, more than doubled their academic gains in math and nearly doubled them in reading. At Summit Public Schools, 57% of

students passed at least one Advanced Placement exam, as opposed to 27% of students in the state of California. Findings of academic measures through both the RAND report and the Summit Public Schools' study indicate that personalized learning approaches can positively impact student academic gains.

Social emotional and cognitive benefits. Academic performance is just one measure that is used to determine the impact that personalized learning has on its stakeholders. Personalized learning also can affect social-emotional and cognitive capacity to increase the impact of learning. A study by Clarke and Frazer (2003) documented the results of a field study of seven high schools in New England as they implemented personalized learning strategies. The researchers recognized essential elements of personalized learning and identified six categories that highlight both personal needs of the student and school practices. The elements noted were recognition, acceptance, trust, respect, purpose, and confirmation all of which are contingent on relationships from within the school environment. As a result of the study, Clarke and Frazer emphasized the need for personalized learning experiences that allow students to direct their own life as well as to improve the life of the community. Their study of personalized learning illustrates the importance of relationships in learning and the need for personal relevance and mean making in the learning experience.

In their handbook on personalizing learning, authors Bray and McClaskey (2015) contended that including social-emotional and cognitive factors such as social interaction, motivation to learn, connection with society and real life, thinking about thinking, mastery, flow, and growth mindset, in the learning experience increase engagement. For example, teachers in the four schools studied in the District Reform Support Network

(2016) report stated that the use of personalized learning approaches encouraged positive change in classroom behaviors as students across the board were more engaged. Students self-reported that they were more persistent in problem-solving, engaged in group collaboration more frequently, had more positive attitudes and increased in the use and knowledge of technology.

In response to a legislative measure enacted in Vermont mandating that students in grades 7-12 develop a personalized learning plan, Nagle and Taylor (2016) conducted a study on the impact of a personal learning framework integrated into personalized learning plans at an area middle school. The study term was a two-year period in which the researchers documented how personalized learning plans affect teacher practice and student engagement. The researchers found that understanding their values allowed students to better relate to curriculum. The use of goal setting, reflection, revision, and assessment in the learning plans fostered the development of social-emotional learning skills and a growth mindset. In one lesson on the *Odyssey*, students completed a social relations web, values chart, and reflection on their own lives. A subsequent survey revealed that two-thirds of the students agreed that identifying and understanding their values and personal relationships helped them to gain a better insight into what drove Odysseus' decisions based on his values, thus reaffirming the role that personalized learning plays in the development of social-emotional and cognitive factors.

In addition to academic improvement, the U.S. Department of Education (District Reform Support Network, 2016) study and the study by Nagel and Taylor (2016) illustrated the cognitive benefits of using personalized learning. Cognitive benefits included social interaction, motivation to learn, connection with society and real life,

thinking about thinking, mastery, flow, and growth mindset. The research supports the use of personalized learning for student learning improvement. Teacher development and growth in the area of personalized learning are important considerations when determining what the focus of professional learning opportunities should include.

Barriers to the successful implementation of personalized learning in schools. Even with the expanding field of research on the impacts of personalized learning on student learning, district leaders, as well as school leaders, struggle with the implementation of personalized learning within their schools. Schools that have successfully implemented personalized learning noted challenges with implementation not only in their earlier years but as they continued to provide personalized approaches. These challenges tend to fall into two broad reaching categories being systemic needs and teacher support needs. Both categories are examined below.

Systemic needs. Spencer (2014) interviewed teachers and leaders in K-12 public schools mostly in the Mid-western region of the United States. The results of her study indicated that transferability of personalized learning to an entire school or district was perceived as a barrier. Participants noted that while they wanted to extend personalized learning on a broader scale, a lack of control of the pace of the scaling, understanding of the benefits of personalized learning and the upfront planning, development, and engagement of the practice were seen as barriers to the approach being used system-wide.

Another issue regarding systemic implementation of personalized learning in schools was a lack of sufficient communication about the vision of personalized learning (Department of Education, 2016). Without the deliberate communication of the vision for personalized learning, schools reported a conflict of interest concerning assessment

practice (Department of Education, 2016; Pane et al., 2015; Spencer 2014). In particular, participants felt the need for standardized tests and writing assessments prevented the revision of curriculum to accommodate personalized practice adequately, indicating a need for shared understanding and agreements, before implementation (Pane et al., 2015).

Teacher support needs. Teachers reported a lack of support as a challenge of implementing personalized learning (Department of Education, 2016; Jenkins & Kelly, 2016; Pane et al., 2015; Spencer 2014). This included lack of training and resources. This finding was further supported by the results of an Education Elements website survey in which participants were asked what they perceived as the biggest challenge to implementing personalized learning (Jenkins & Kelly, 2016). Respondents to the survey on personalized learning expressed that buy-in was their number one concern. However, support and training was a close second for both teachers and leaders when implementing personalized learning. Teachers were most concerned about the specifics of personalized learning such as how to set up a classroom, what good personalization looks like, and managing technology.

Similarly, the Department of Education study (2016) and a report by An and Reigeluth (2012) detailed a need for professional development for teachers on both the personalized learning approach and the technology used to support the approach. Among teacher concerns were a lack of training, support, and resources. Teachers felt they needed more time to develop personalized content and lessons and, in some instances, they needed more resources such as access to technology (An & Reigeluth, 2012; Department of Education, 2016; Pane et al., 2015; Spencer 2014).

Commonalities in each of the studies highlight a need for better professional development practice for teachers when it comes to implementing personalized learning approaches. The research supports the use of CoPs as a means to provide that professional development because CoPs allow for autonomy, relevancy, authentic learning, group problem solving, resource sharing, and self-efficacy, elements found in personalized learning approaches. The current study focuses specifically on the need for sustained professional development in personalized learning, supported by a learning community that provides value and knowledge for the whole school. Professional development that fosters organizational learning is an imminent need in schools wanting to meet the needs of learners through a personalized learning approach.

Summary

To gain a better understanding of personalized learning approaches and to identify best practices around providing a supportive, high-quality professional development opportunity, I conducted a literature review. The literature review covered the following topics: professional learning, the development of organizational learning, learning communities, personalized learning, and barriers to successful implementation of personalized learning. Because research in the field of personalized learning for teacher professional development is limited, I expanded the focus to professional development that has the ability to foster organizational change, the type of systemic change needed for personalized learning to be embedded in a school system.

Research on professional learning shows that inquiry is crucial, learning is dependent on the shared understandings of the group, and that those shared understanding can promote the growth of the organization (Collinson & Cook, 2007). This illustrates the

need for ongoing collaboration in professional learning in order for organizational learning to take root. A social and collaborative approach to professional development can be manifested in various group learning endeavors. It was my intent to implement a CoP for the current research. I embed elements of organizational learning (e.g., knowledge construction and inquiry) to support teachers in developing their instructional practice in the area of personalized learning.

In Chapter 1, I shared the problem of practice, purpose and context for the study, challenge of leadership, literature related to personalized learning, organizational learning, professional development, and research questions. In Chapter 2, I provide greater detail about the intervention and approach used for the community of practice as well as additional details on the context of the study and the data methods select.

CHAPTER 2

METHODOLOGY

In this chapter, I describe the research setting, context of the study, and research questions before communicating the plan of action for the study. The plan of action includes details on the methodological structure of the MMAR process, data collection plan, and data analysis. I conclude the chapter with a discussion on quality assurances, ethical considerations, and a timeline of the study.

Research Setting

This study takes places at Nā ʻOhana Schools, a private school serving indigenous students, located in the state of Hawaiʻi. The specific site for this study, Ka Pilina, is one of the three K-12 campuses the school maintains. Ka Pilina serves approximately 1,068 students in grades K-12 annually. Students from various socio-economic levels are represented. There are just over 250 full-time staff members on campus, of which 105 are teaching faculty and grade level counselors.

Organizational Context

In 2016, Nā ʻOhana Schools unveiled a new, organization-wide strategic plan for the entire organization along with a tactical plan focused on education. The goal of the tactical plan is for Nā ʻOhana Schools to become a world-class education system that provides students with a culturally grounded, personalized educational experience. The highest level of leaders in the organization, the Chief Executive Officer, Trustees, and Executive Vice Presidents agreed to the goals of the tactical plan as a beacon for school improvement. That plan has now been handed over to the campus level administrators (i.e., the headmaster, principals, vice principals, and the curriculum director) to set the

vision for their campus and provide resources needed to implement that vision. Administrators at the Ka Pilina site determined a culture of professional learning needs to be firmly established to address the curricular gaps found in the areas of rigor, relevance, and relationships while also meeting the directives of the new tactical plan.

To meet this vision, the Ka Pilina site opted to take a personalized learning approach to enhance curriculum and student engagement. The school implemented a personalized learning opportunity through a community of practice (CoP). Teachers at the Ka Pilina site were afforded the chance to participate in the CoP with structured interventions that helped participants understand the pedagogy behind personalized learning. The goal of the CoP was to offer teachers the opportunity to experience personalized learning firsthand and as a result, develop strategies to implement methods in their classrooms. The intent of the current study was to understand which activities, if any, within the CoP helped teachers feel comfortable in implementing personalized learning in the classroom, as well as to gauge teacher perception of organizational learning after participating in the CoP.

Collaborator Roles

At the Ka Pilina site, each division (elementary, middle, and high) has supports in place for professional learning. A curriculum coordinator along with the supervising principal help teachers at the start of the year set and implement performance goals that meet curricular and student needs as well as targets on the Student Learning Improvement Plan. This Student Learning Improvement Plan is based on school data gathered the previous year. It is annually updated and reviewed. The Student Learning Improvement plan is essentially a set of school-based goals set to try to improve student

learning outcomes. An instructional observer schedules regular classroom visits with teachers to observe teaching strategies and make recommendations when warranted. Both an instructional observer and the principal observe teacher practice in the classroom and coach teaching strategies that help teachers work towards achieving their performance goals. Teachers also have access to instructional technology specialists who assists with technology integration into the curriculum. Along with this support structure, professional development activities are scheduled and geared to the performance goals set at the start of the year.

Teachers meet in two main teams. Grade level teams review student data and meet to discuss interventions for specific students as well as logistical details with the school such as upcoming events, scheduling, activities, etc. Grade level teams are led by a teacher appointed by the principal for a term of two years. Content area teams focus on curricular work such as transfer goals and rubrics from student learning outcomes. Content area teams are led by curriculum coordinators. Grade level team and content area leaders are responsible for attending leadership team meetings with campus leaders, facilitating regular meetings, and ensuring agreed upon outcomes are met.

Role of the Researcher

During the study term, I served as an instructional technology specialist. My role was to consult and coach faculty on the integration of technology in an educational context by providing resources and training on tools and pedagogy in the field. As part of this work, I provided support to faculty, instructional staff, and administrative staff on integrating technology into the curriculum. I also consulted on the design, specification, and requests for appropriate technology tools, provided small and large group

professional development training sessions, and coordinated project initiatives with faculty, administrators, and department personnel.

As part of the implementation of the tactical plan, my role was to support the design of technology-enhanced, personalized learning in curriculum and instruction as well as the development and administration of an evaluation process to assess the effectiveness of content and delivery. Consistent with my job responsibilities, my role in this study was to support the development, implementation, and assessment of personalized, technology-enhanced curriculum by teachers through the provision of robust a professional development opportunity through a CoP. I served as a facilitator and coach for participants. Activities, discussions, examples, and modeling were a part of the design of the professional learning setting. This action research project was designed to determine teacher perceived benefits of participating in a personalized learning focused CoP and the likelihood of teachers to change their practice as a result of participating in the CoP.

Research Plan

Based on the literature review of professional development and data gathered through informal surveys and interviews with teachers and leaders as presented above, I selected a CoP to support professional development to implement personalized learning as the intervention at Ka Pilina. The CoP addresses the needs outlined in the first two bullets of the tactical plan: (1) engaging students through personalized learning opportunities and (2) empowering educators (K. Thomas, personal communication, September 2, 2016). While I opted to use a CoP, the exact model and structure of the CoP was determined as part of the action research process.

Research Purpose Statement

The purpose of this MMAR study was to examine the use of a CoP in supporting teachers as they transition to personalized approaches to teaching at a private, K-12 school in Hawai‘i. In the Diagnosing Phase, the problem of practice was identified, and study aims were developed. The aim of the study was to determine how participation in a CoP affects teacher self-efficacy to use a new approach to learning and their perception of organizational learning. The research occurred in various phases.

The goal of the Reconnaissance Phase was to gauge teachers' self-efficacy in the use of personalized learning approaches, to understand their perception of organizational learning in their school, and gain input of how to design a CoP to support them in implementing personalized learning in their classrooms. Data collected from surveys was used comparatively at the end of the study. A researcher developed questionnaire was used to inform the development of a CoP to support teachers in using a personalized approach to learning. In the Planning Phase, the structure of the CoP was detailed and a series of tailored professional development activities created.

The goal of the Evaluation Phase of the study was to identify the effectiveness of the intervention on preparing faculty to teach using personalized approaches by using a concurrent mixed method design to collect and analyze teacher responses to surveys, interviews, and documents. The rationale for applying mixed methods was that MMAR offers a practical, inquiry-based, outcome-oriented approach. The MMAR design allowed the researcher to gain more insight into what approaches teachers felt best supported their move to personalized teaching strategies and to assess the comfort level of teachers as they implemented the approach in their classrooms.

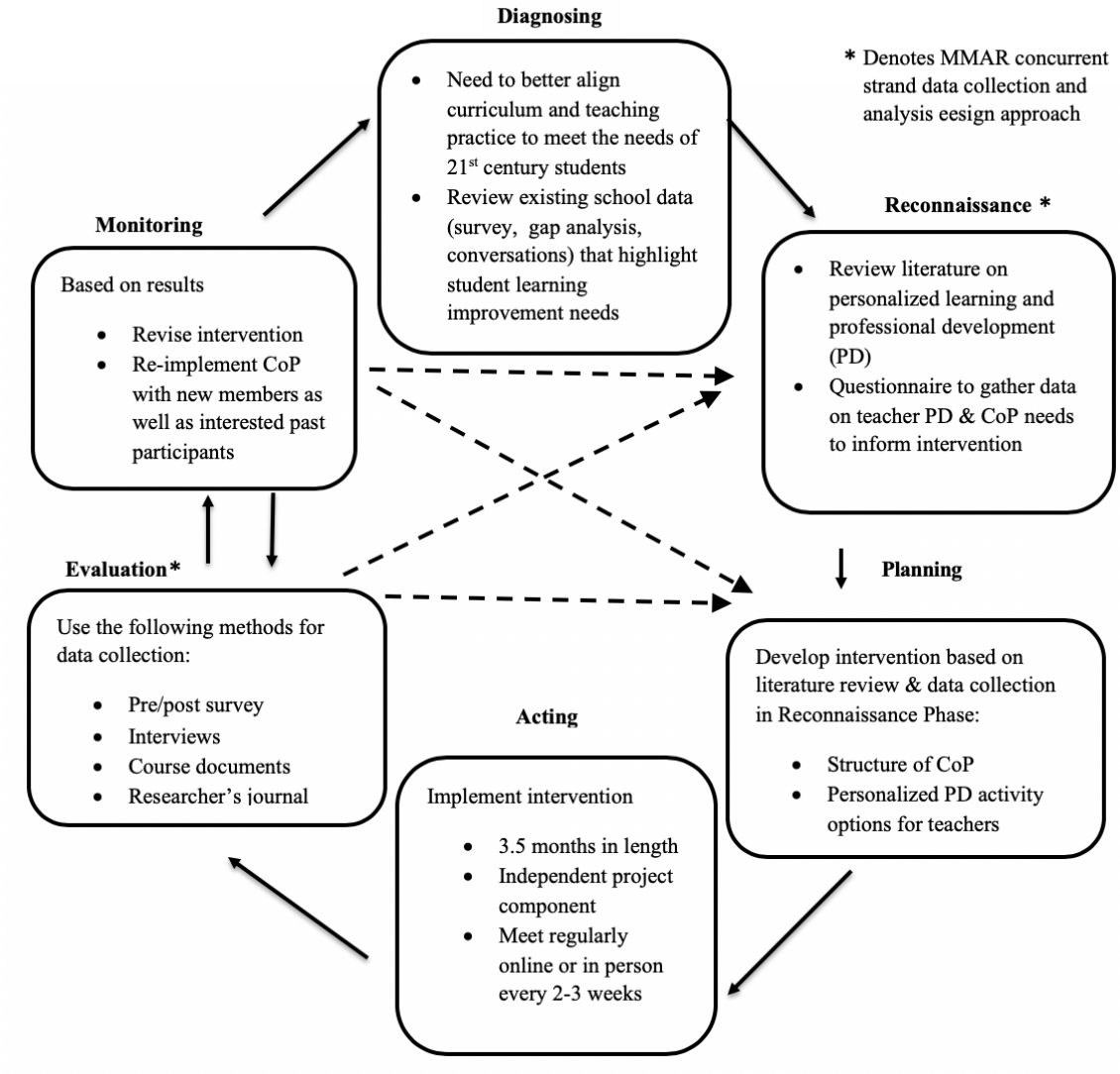
Research Questions and Expected Outcomes

The vision of the school to become a world-class educational institution was outlined in a new tactical plan. To achieve the desired outcomes, faculty members need training in pedagogical practice that supports the goal of the plan. While the need has been identified, there is a lack of meaningful and relevant training opportunities for which teachers can participate. The aim of the study is to determine how participation in a CoP affects teacher self-efficacy to use a new approach to teaching and learning and their perception of organizational learning. The research questions that guide the study are as follows:

- How does participation in a community of practice affect teacher self-efficacy to implement a new approach to teaching and learning?
- To what degree does participation in the CoP provide value for participants?
- How does teacher perception of organizational learning change after participating in the community of practice?

The research questions were developed to provide insight into the implementation of a CoP to support teacher development and self-efficacy in the use of personalized learning approaches, to determine if teachers find value in the CoP, and to measure their perception of organizational learning in their school. Based on the research questions the intended outcome of the study was to assess teacher self-efficacy to teach using a new approach as well as their perception of organizational learning, after participation in a CoP at the Ka Pilina site. The study objectives as they relate to each section of Ivankova's (2015) MMAR framework are outlined in Figure 2.1.

Figure 2.1. Framework for Mixed Methods Action Research



Methods and Procedures

A MMAR design was used for this study. The use of an MMAR design allows for inferences from both the quantitative and qualitative data strands to be synthesized to create meta-inferences that can provide corroborating evidence and well-validated conclusions or reveal discrepancies (Ivankova, 2015). The following section contains a discussion of the methods and procedures including guiding questions for phases, sampling, data collection, and data analysis as they pertain to both the reconnaissance, intervention, and evaluation stages of the study.

Diagnosing Phase

In the Diagnosing Phase, the problem of practice was identified through a review of pre-existing site-based data and stakeholder input. Issues related to the need for rigor, relevance, and relationships in the student learning environment were detected. As a result of research by members of the organization, the desire for a focus on a personalized learning approach was specified.

Guiding questions. To guide the research for the Diagnosing Phase, I developed questions for the both the quantitative and qualitative strands. In the quantitative strand I was able to identify existing data sets that indicated the general perceptions of the impending implementation of personalized learning at the school. In the qualitative strand I reviewed teacher and leader input on projected concerns and identified needs for the successful implementation of personalized learning at the school. The guiding questions for this phase are provided in Table 2.1.

Table 2.1

Diagnosing Phase Guiding Questions

Strand	Guiding Questions
Qualitative	• What areas of concern do teachers and leaders identify in terms of implementing a personalized approach at the school site? • What needs do teachers and leaders foresee to help with a successful implementation of personalized learning at the site?
Quantitative	• What are teacher perceptions of plans to implement a personalized approach to learning at the study site?

Sources of information. In the Diagnosing Phase, two formats of pre-existing data were reviewed, a questionnaire and organizational conversations. The two information sources represented responses from approximately 20% of the faculty and administrative population. Both quantitative and qualitative data were gathered from the questionnaire. Qualitative data were also collected during the conversations.

Readiness for change questionnaire. In 2017, after the new tactical plan and learner outcome documents were shared across the entire organization, two teacher leaders from the study site circulated an informal questionnaire to determine how teachers felt about the impending changes. The questionnaire consisted of seven questions on a Likert scale, ranging from 1-strongly disagree to 5-strongly agree. There were four open ended questions included in the questionnaire. Participation in the survey was optional and approximately 20% of teaching faculty opted to respond.

Organizational conversations. The teacher questionnaire provided insight into teacher perception of change. For this study, it was also important to learn what leaders at Nā ‘Ohana Schools’ Ka Pilina site felt was necessary to see a sustained change in practice. The school headmaster, curriculum director, strategic planning manager, and an educational consultant participated in the organizational conversations. Each leader

shared their responses to questions individually and a recording and transcript of the conversation was collected to aid in theme extraction. The conversations provided insight into leader perspectives and visioning of the implementation of personalized learning at the study site.

Diagnosing Phase findings. Pre-existing data reviewed during the Diagnosing Phase were used to identify a problem of practice for this study. The analysis of data informed the direction and structure of the literature review. A discussion of the data is found in the following sections.

Questionnaire findings. Results from the questionnaire indicated that while the Ka Pilina site faculty understand the need to prepare students for a changing workforce, they are unsure of how moving to a personalized approach to learning will aid in that preparation. Over 76% of respondents either somewhat or strongly agreed with the statement that personalized and culture-based learning is needed and appropriate for our school. However, over 76% of the teachers also expressed their disbelief that the school can achieve the organizational goals using the existing school structure. The remaining 23% of teachers did not agree or disagree with the statement, while none of the respondents agreed or somewhat agreed with the statement. Concerns over a lack of knowledge on personalized learning, inquiry-based approaches, new culture-based competencies for learning, and feeling that what they have long held on to concerning their teaching practice is still adequate, contribute to this uncertainty.

Respondents also identified the need for clarity in vision and expectations of campus-based leaders, examples of new pedagogical practice, proper training, support, and resources from a list of multiple choices on the questionnaire. Results of the

readiness for change questionnaire demonstrate the level of unease of teachers, not over what or why, but of how. The need for transformative professional development provides an opportunity to nurture a supportive and innovative culture of learning through a CoP.

Organizational conversation findings. Several themes emerged from a review of the transcripts from the conversations with four school leaders. The leaders identified policies and practices they perceived as hierarchical barriers to innovation and change. One such example is a heavy-handed risk management approach that is perceived to unnecessarily lengthen the time it takes for the school to adopt new technology. Another barrier to change was a perceived lack of trust in the school's ability to adapt. One comment, in particular, reflects this thinking where a school leader said "work that we've typically done in the structured hierarchy hasn't gotten us any really big innovative changes or sustained results for students." Finally, the leaders shared the sentiment that there is a need to develop a sense of urgency around the challenge to become a world-class educational institution.

When asked what elements would foster change at the school, the four leaders expressed the need for a shared vision and a clear understanding of where we want to go as a school. Additionally, the desire for a culture supportive of risk-taking, innovation, a fail-forward mentality, and an entrepreneurial mindset were suggested by leaders as reasons to support change. The need to move away from hierarchical policies and procedures to a system that allows for a shared vision and a culture of trust that fosters innovation and risk-taking was emphasized and can be addressed through organizational learning.

After reviewing the pre-existing findings in the Diagnostic Phase, an extensive literature review was conducted to determine whether a CoP would be a viable model for implementing the personalized professional development experience at Ka Pilina. Research on the use of CoPs for professional development, indicated that this approach might meet the needs of schools to implement organizational learning through a shared vision, collaboration, relationships, shared knowledge, and the creation of new knowledge, all facets that can be developed in CoPs (Duncan-Howell, 2010; Leithwood et al., 1998; Wenger-Trayner & Wenger-Trayner, 2015).

Reconnaissance Phase

The goal of the Reconnaissance Phase was to assess baseline data on teachers' self-efficacy in the use of personalized learning approaches, perception of organizational learning in their school and input on how to design a CoP to support them in implementing personalized learning in their classrooms. Hawley and Valli (1999) encouraged the individual pursuit of effective teaching strategies through a model that allows teachers to design their own learning experiences and decision-making for their classroom. This method ensures teachers are invested in the professional development exercise as well as the opportunity to build self-efficacy. It was for this reason, I designed a questionnaire to solicit participant feedback and ensure teacher voice and choice as Hawley and Valli encourage.

Guiding questions. The use of the concurrent strand design in this study allows for multiple data collection approaches to occur independently yet be analyzed and synthesized together at the conclusion of the intervention. The goal of the quantitative strand in the Reconnaissance Phase of the study was to collect baseline data on

participant self-efficacy, perception of organizational learning, and to identify preferred characteristics of professional development. The goal of the qualitative strand was to identify participant desire and motivation in regards to professional development sessions. To guide the research for the Reconnaissance Phase, I developed questions (see Table 2.2) for the both the quantitative and qualitative strands.

Table 2.2

Reconnaissance Phase Guiding Questions

Strand	Guiding Questions
Qualitative	• What do teachers perceive as essential characteristics of quality professional development? • What characteristics of professional development do teachers feel help them to best implement new strategies in their classrooms? • How do teachers conceptualize a community of practice?
Quantitative	• Which types of community of practice elements do teachers believe would be most beneficial in a professional development program focused on personalized learning? • What preferences do teachers have in regard to professional learning experiences? • Which factors most motivate teachers to participate in professional development programs? • How do teachers perceive their efficacy to teach using new approaches (personalized learning), prior to the intervention? • How do teachers perceive organizational learning at Ka Pilina, prior to the intervention?

Sample. The participant pool for this study consisted of teaching faculty at one, private, K-12 school site, in the state of Hawai‘i. Participation in the study was voluntary and teachers were recruited through an open call. Volunteers were asked to participate in all phases of the action research study. I had a goal of recruiting twelve participants from the Ka Pilina site. Seventeen signed up, but only fourteen attended the first meeting. Of the fourteen that attended the first meeting, twelve participated in the data collection for the Reconnaissance Phase of this study. Recruitment began in late January 2019 and

participation was requested through May 2019. The study sample was asked to complete both the qualitative and quantitative analysis strands so results from the data collection could be cross-referenced for more in-depth conclusions. The school provided incentives for study participants. A teacher could opt to earn advancement credits. Additionally, principals agreed that teachers who work in teams to complete their implementation project, would be eligible to receive extra planning time during the school day.

Data collection. In the Reconnaissance Phase, data were collected via two means: a questionnaire and two surveys. The questionnaire included both quantitative and qualitative measures. The surveys were both used to collect pre-assessment, quantitative data to measure the effectiveness of the intervention. Both the questionnaire and the two surveys were administered at the start of the intervention.

Questionnaire. I developed a questionnaire to assess participant needs. The questionnaire consisted of three sections, professional development, personalized learning, and CoPs. The purpose of the questionnaire was to gather input from teacher participants on how to design a CoP to support them in implementing personalized learning in their classrooms. The questionnaire was administered prior to the start of the intervention. The final version of the questionnaire was provided in Appendix A.
The questionnaire was administered electronically via Google Forms and the data were stored in a spreadsheet. Study participants were asked to participate annonymously. The responses were housed in Google.

Self-efficacy survey. The first survey to be administered was the Teachers' Sense of Efficacy Scale long-form, also referred to as the TSES. Self-efficacy was selected as a measure in this study because it relates to people's motivation, behavior, and their

ultimate success or failure in a given situation (Bandura, 1997). Bandura defines self-efficacy as the belief "in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 2). Without self-efficacy people perceive that their efforts will be futile, so they do not want to expend effort to complete the task or challenge. In the case of the study, self-efficacy was used as a measure to determine teacher belief in their own ability to implement a new, personalized learning approach in their classrooms, after participation in the intervention. The TSES was used as a measure of teacher self-efficacy in this study. A copy of the survey can be found in Appendix B.

Rationale for using TSES. Tschannen-Moran and Woolfolk Hoy (2001) developed the TSES to provide a new measure of self-efficacy with higher validity and reliability ratings. The effective measurement of teacher self-efficacy has significant implications. Teacher self-efficacy has been linked to student achievement, motivation, goal setting, and classroom management (Allinder, 1994; Midgley, Feldaufer, & Eccles, 1989; Ross, 1992). Teachers with higher self-efficacy tend to be more supportive and less critical of their students, utilize better instructional and assessment strategies, are more enthusiastic, and have a greater commitment to their field (Tschannen-Moran & Woolfolk Hoy, 1998). Teacher self-efficacy has also been linked to the implementation of new instructional strategies when professional development uses a combination of pedagogical training and peer interaction (Bruce & Ross, 2008).

The TSES was developed to measure a "broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for comparisons of teachers across contexts, levels, and subjects" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801-802). The advantage of using the TSES is that it is not too

specific and therefore can be used to assess teacher self-efficacy in various educational contexts and levels. The TSES has been shown to be a valid measure in several studies of varying contexts such as culture (Khairani & Razak, 2012), innovation (Tsigilis, et al., 2007), and content (Butts, 2016). The TSES assesses self-efficacy through three constructs: classroom management, student engagement, and instructional practices and questions are aligned accordingly. Questions listed in the instructional strategies group measure the degree to which instructors feel they have the ability to facilitate both conducive learning environments and effective learning process. This includes teaching strategies, approach, and delivery of rigorous learning content. Questions in the classroom management group, refer to the extent to which teachers can manage student discipline and influence student behavior. Questions in the student engagement set are intended to measure the extent that teachers believe they can foster positive student attitudes towards learning, influence engagement in school activities, and increase students' motivation. These elements are also key in components of a personalized approach to learning.

The TSES for measuring personalized learning. The personalized learning approach emphasizes good teaching practice through placing the needs and interests of individual learners at the forefront (Bray & McClaskey, 2015). Personalized learning focuses on students as individuals and shifts the focus of learning from what the teacher is doing to what the student needs to learn. To meet student learning needs, teachers must still play an active role in education by using data to adjust instruction and to develop an in-depth knowledge of individual student interests, needs, and characteristics (Patrick, Kennedy, & Powell, 2013). This aspect of personalized learning correlates with the TSES

construct of instructional practices through the design of conductive learning environments and effective learning process, just on an individual, versus whole class basis. Teachers use their knowledge of student interests to not only create a flexible learning environment, but to increase intrinsic motivation for students. Assessment is also individualized and may include formative, summative, and performance-based measures with the goal of mastery of both knowledge and skills. Waldeck (2007) argued that education tailored to the needs of individual learners leads to higher levels of motivation and learning and Johnson et al. (2017) suggested that this individualization can potentially reduce the occurrence of misbehaviors. This links to both student engagement and classroom management to personalized learning approaches, the other two constructs of the TSES. Teachers therefore must not only possess but be comfortable with a broad range of teaching strategies and capabilities to meet individual student needs.

TSES constructs. The TSES long-form consists of 24 items with three subscales that measure efficacy in student engagement, instructional practice, and classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is rated using a nine-point Likert scale. The TSES was administered via Google Forms prior to the start of the intervention and again at the conclusion. Permission to use the survey is found in Appendix C. Data from this section was used to inform research question 1.

Organizational learning survey. The second survey, The Organizational Learning Survey (Appendix B), is an instrument developed by Higgins et al. (2012) to measure the perception of organizational learning in schools. Higgins et al. modified the Organizational Learning Survey created by Garvin et al. (2008) for use specifically in the school setting. Higgins et al. selected statements from one subset of each of the three

building blocks found in the framework developed by Garvin et al. The three building blocks are psychological safety, experimentation, and leadership that reinforces learning. The survey consists of twelve statements presented, on a seven-point Likert scale. In the Higgins et al. study, the items were scored with seven being the highest. Data gathered from the Organizational Learning survey was used to inform research question 3.

Survey storage and management. The surveys were administered electronically via Google Forms and the data were stored in a password protected spreadsheet. Survey participants were assigned individual identification codes to use in place of their names on the survey. This approach was ensured responses would be kept confidential, yet pre- and post-assessment scores could be compared and triangulated with other data. I maintained a record of the subject's identity in a separate, password protected file on my computer.

Data analysis. In the Reconniassance Phase, I used a mixed methods data analysis to assess whether the results for both strands converge or diverge in addressing the guiding questions for the Reconnaissance Phase. First, I analyzed the quantitative and qualitative results separately. I used descriptive statistics to describe the quantitative data to identify trends and possible relationships among the variables. I used in vivo coding to analyze the qualitative data in order to preserve participant voices so that they could inform future action. I then compared the findings in a summary table to determine preferred characteristics of professional development as well as participant desire and motivation in regards to professional development sessions. The findings were used to shape the format and activities of the CoP.

Quality assurances. Validity and reliability are used to determine the rigor of methodological procedures in quantitative research (Ivankova, 2015). To establish validity of the questionnaire, I used cognitive interviews. To ensure reliability I used research from reputable sources in the form of surveys that were tested in prior studies.

Validity of the questionnaire. Cognitive testing was conducted on the questionnaire (see Appendix A) to ensure the validity and accuracy of the assessment items. A total of five school-based administrators and curriculum support staff were asked to participate. All participants have worked at Nā ʻOhana Schools for a minimum of five years and have held positions as classroom teachers prior to their change in career path. Techniques used in the cognitive interviews were based on the work of Willis (2004). Strategies included asking participants to read a question aloud, then the researcher followed with cognitive questions (e.g., was this hard or easy to answer, is there a word or phrase you did not understand, can you think of another response option, etc.). A compiled list of changes based on recommendations from cognitive testing can be found in Appendix D.

Reliability. To mitigate issues with survey reliability research from reputable sources are used in constructing the survey (Creswell, 2009; Fowler, 2014). Both the TSES and the Organizational Learning surveys were used in their full capacity as developed by survey authors.

Reliability and validity of TSES. According to Tschannen-Moran and Woolfolk Hoy (2001), the TSES has a reliability rating of .94 for the overall instrument. The alpha score for each of the three constructs was sufficient with scores of .87 in engagement, .91 in instruction, and .90 in management. Tschannen-Moran and Woolfolk Hoy found

positive correlation with other existing measures of teacher self-efficacy to show construct validity of the survey. In each of the three measures Tschannen-Moran and Woolfolk Hoy compared to the TSES, the results were similar ($p < 0.01$).

Reliability of Organizational Learning survey. The organizational learning subset items were included in a larger pilot survey by Higgins et al. (2012) designed to determine teacher perception of principal performance. Drawing on the work of Garvin et al. (2008), Higgins et al. conducted field testing on the entire Garvin et al. scale. In total, 432 subjects from four separate sample populations were used to establish validity and reliability. The first round of field testing did not include participants from educational institutions, so the authors conducted cognitive testing with educational professionals to assess the scale for applicability to the school setting. In total, 941 teachers responded for a 37% response rate.

From the cognitive testing, the authors removed items related to resources and focused on those about behavior and disposition. Additionally, they removed items that would not work well in the school context and reworded the statements with language specific to schools. Higgins et al. (2012) used confirmatory factor analysis to confirm the structure of the factors in relation to organizational learning and thereby validate the subscales for their ability to assess levels of organizational learning in a school. They also used path analysis to determine the directionality of relationships found in the data. As a result of their study, Higgins et al. confirmed that while each of the three subsets are independent and can be measured on their own, to accurately assess the levels of organizational learning, one should use all three constructs together.

Planning and Acting Phases

The intervention was to provide teachers with a personalized approach to professional development through a CoP. Based on informal, preliminary data collection at the site in the form of a teacher questionnaire and leader interviews, as well as extensive review of literature on professional development and personalized learning, I opted to use a CoP. The exact structure of the CoP was determined based on the data collected from participants in the Reconnaissance Phase of this study.

Planning Phase. In the planning stage, meta-inferences gathered in the Reconnaissance Phase were used to inform the plan of action. Activities and experiences were designed to meet the needs of participants based on their input gathered from the questionnaire and surveys in the Reconnaissance Phase. The action plan included a series of professional development activities including, but not limited to, discussions, sharing sessions, meetings, practice, observations, and the development of an implementation plan. The professional development activities as well as meeting times, dates, and formats reflect participant input as the plan was shared with stakeholders for approval, before the implementation phase began.

Acting Phase. In the Acting Phase, the participant designed CoP was implemented at Ka Pilina. The time frame for the intervention spanned approximately four months, with regularly scheduled meetings, activities, and checkpoints as indicated by participant choice. The plan of action included synchronous and asynchronous meetings, discussions, and content sharing sessions, as well as a participant generated plan of action for use in their individual settings. Based on a review of the literature on

the functions of CoPs, the intervention focused on three of the five stages of CoPs; potential, coalescing, and maturing.

A voluntary cohort of teachers was asked to participate in approximately 8-12 hours of content training along with a minimum of 12 hours of participation in the CoP through online discussions and meetings. Teachers were asked to attend three sessions on campus: the opening session, an affinity group meeting, and a closing, project sharing session. Teachers were also asked to participate in four online synchronous sessions, scheduled approximately every two weeks using Zoom. The remainder of the activities varied based on teacher choice, except for the evaluation of the CoP. A chart detailing activities, persons responsible, locations, and time frame is found in Table 2.3.

Table 2.3

Community of Practice Action Plan

Tasks & Activities	Responsible Party	Site	Date	Duration
Opening session	Researcher	On-campus	Feb 2019	90 min
Group discussion & sharing meetings (synchronous & asynchronous)	Researcher, CoP participants	On-campus or online	Feb – May 2019	5, 60 min sessions
Affinity groups, ideate action research projects	Researcher, CoP participants	On-campus	Feb 2019	120 min
Action research planning, research, development	Researcher, CoP participants	Varies	Feb – April 2019	Varied by project
Share plans for review & approval	Researcher, CoP participants, campus leaders	On-campus	Feb/March 2019	60 – 90 min
Implement action plan & share outside of CoP	CoP participants, other faculty	On-campus	May 2019	Varied by project
Evaluate the CoP	Researcher, CoP participants	On-campus	May 2019	30 – 45 min per participant

To help guage the maturity level of the CoP, I used a framework created by Wenger, McDermott, and Snyder (2002). Wenger, McDermott, and Snyder identified five stages of community development: potential, coalescing, maturing, stewardship, and transformation. There are wide variations in the way that communities experience the stages, and due to the shorter timeframe for this study, I anticipated that we would only be able to engage in the first three stages. The stages are described in the following sections.

CoP stage 1: Potential. In the potential stage, the community forms and the intent for the community is clarified (Wenger, McDermott, & Snyder, 2002). For the current

study, the opening session provided an in-person opportunity for community members to come together to help define the scope of the domain, foster communication and relationship building, and build knowledge around personalized learning. The opening session was 90 minutes in length. The first portion of the session was spent on relationship building activities and defining the scope, vision, and function of the community. An online reflection and discussion board sharing post was added at the end of the session as a way to ensure that all members had the opportunity to share their opinions and needs, and the conversation could carry on beyond the class session.

CoP stage 2: Coalescing. In the coalescing stage, the community needs to generate energy to coalesce (Wenger, McDermott, & Snyder, 2002). At this time, the community must build sufficient trust to be able to work through problems and issues. The community also should develop an awareness of common needs. For the current study, the opening session included activities that were designed to strengthen relationships between members. The activities were team building exercises, discussion prompts, idea and need sharing, and the sharing of insights and practices that community members discover or poses. These activities allowed for the continuation of group discussion and meetings through the duration of the intervention.

To foster the sharing, growth, and development of knowledge around personalized learning, the group discussion and meetings were organized into five topics relevant to incorporating personalized learning in the classroom. The topics were:

1. What is personalized learning
2. How to personalize learning parts 1 and 2
3. How to assess personalized learning

4. Creating a culture of personalized learning, and
5. Sharing your personalized learning journey

As the CoP coordinator, I shared resources, found experts, and supported participants as they identified their own pathway to implement personalized learning within their disciplines. These group discussion and sharing meetings took place synchronously online via Zoom.

Documents collected online via discussion board posts were used throughout the process to capture participant reflection and sharing. These discussion posts were attached to each of the six personalized learning topics presented in the group meetings. Teachers were able to participate in the discussion board threads outside of the synchronous meeting time. To support the distribution of content as well as sharing asynchronously the CoP members had access to a designated space on the learning management system, Canvas.

In late February 2019, CoP participants were asked to develop action plans and form affinity groups. I hosted a synchronous meeting in which the group brainstormed and shared ideas for implementing personalized learning. They then formed the affinity groups and worked on an outline for their support needs as they worked on their action plans. The affinity groups each had their own designated space on the learning management system where participants shared and discussed as needed. The action plans included any appropriate lesson plans, objectives, standards alignments, skill-based competencies, assessments, and resources needed for implementation. Teachers also detailed the learner elements that support personalized learning to which they aligned

their work (Bray & McClaskey, 2017). The action plans were uploaded to the learning management system for sharing and feedback.

CoP stage 3: Maturing. As a community reaches maturity, it clarifies its focus, role, and boundaries. It is at this time it moves from sharing tips to developing its own body of knowledge. During the maturing stage, the community is also more intentional about involving additional members from the organization. The schedule for this study did not allow enough time for the community to reach the maturing phase. I however, set the groundwork for movement in that direction with the intent to continue the CoP beyond the scope of this study.

To foster the CoP towards the maturing stage, I focused on expanding the membership boundaries and organizing a knowledge repository. The learning management system served as the knowledge repository. As such it was my responsibility to organize resources in a manner that promoted ease of access. I organized and tagged resources so that they were easily found when needed. While the expansion of membership is not a goal of the study due to time constraints, the second to the last activity that CoP members participated in was sharing their work on personalized learning with teachers outside of the community. While not all of the CoP members shared their work, four gave informal presentations to the larger faculty at the end of the school year. I hope that the community can continue to mature beyond the scope of this study and can eventually realize the other two stages of stewardship and transformation. Artifacts from each of the stages can be found in Appendix E.

Evaluation Phase

The purpose of the Evaluation Phase was to identify the effectiveness of the intervention in preparing faculty to teach using personalized approaches. The goal of the qualitative strand was to understand changes in teacher self-efficacy and perception of organizational learning through the use of a CoP for professional development in the context of personalized learning. The qualitative strand was assessed using teacher responses to surveys, interviews, responses to the discussion board, an implementation plan, and the research's journal. The goal of the quantitative strand was to determine if teacher self-efficacy and perception of organizational learning changed as a result of participating in the CoP. Data for the quantitative strand were gathered through surveys. The guiding questions for both the qualitative and quantitative strands are presented in Table 2.4.

Table 2.4

Evaluation Phase Guiding Questions

Strand	Guiding Questions
Quantitative	• To what degree does participation in a CoP build teacher efficacy to teach using a new learning approach? • To what degree has teacher perception of organizational learning changed as a result of participating in the CoP?
Qualitative	• What are teacher perceptions of the use of a CoP to support their professional development? • Which activities within the CoP did teachers find best supported their growth and efficacy towards using new approaches in the classroom, if any? • What degree of value have teachers gained in participating in the CoP, and what are examples of the experience gained at each level identified by the teacher?

In the analysis below, priority was given to the qualitative strand to allow for a deeper understanding of the elements of the CoP teachers perceived as most beneficial.

Sample. The participants in the Evaluation Phase of the study are the same participants that opted into the study during the Reconnaissance Phase. A total of twelve staff participated in the intervention, seven of which completed all of the study data collection requirements. The participants in this study all instruct students at the Ka Pilina site. While a majority of the participants were classroom teachers, one counselor and an instructional design specialist also participated. Years of experience of participants ranged from 12 to 32, with an average of 20.6 years.

Data collection. The Evaluation Phase combined one quantitative strand (i.e., a survey) with three qualitative strands (i.e., interviews, the analysis of documents, and a researcher's journal) generated from within the CoP. The integration of both quantitative and qualitative data sources to inform the guiding research questions allowed me to generate stronger and more credible conclusions. Data collection methods for this study included surveys, interviews, CoP developed documents, and a researcher's journal.

Surveys. I administered the TSES and Organizational Learning Survey (see Appendix B) for a second time at the culmination of the study. Greater detail on the rationale for both surveys, length, scale, and constructs can be found in the Reconnaissance Phase sub-heading under the Methods and Procedures section. The TSES and the Organizational Learning Survey were given to all teacher participants. The purpose of the surveys was to measure the effect of the intervention. The surveys were issued to participants through Google Forms. The results from the surveys were housed on Google Drive and password protected.

Documents. A review of two document sources was conducted during the Evaluation Phase to explore personal experiences and perspectives of personalized

learning within the CoP. Qualitative data were extracted to provide evidence of actions both within and outside of the CoP. Documents were also used to support other data sources to provide clarity and consistency during data analysis.

Discussion board. The primary method for asynchronous collaboration and sharing within the CoP was through conversations on the discussion board within a learning management system. The interactions provided documentation of discussion and reflection around participant learning and growth on each of the six topic modules shared in group meeting sessions. For this study, discussion board prompts were self-reflective in nature. There was one self-reflection requested of participants in each of the six modules of study. A scope and sequence with discussion prompts for each module can be found in Appendix F.

Implementation plan. During the Intervention Phase, participants drafted a personalized learning implementation plan and implemented their plan during the study period. The implementation plan (Appendix E) included any relevant lesson plans, objectives, standards alignments, skill-based competencies, assessment strategies, resources, and personalized learning strategies. The implementation plans were uploaded and housed on the learning management system by participants. Documents were shared between participants and the researcher, but remain housed on the password protected learning management system, protected from public view. Data collected from the implementation plan were used to inform research question 1.

The discussion board posts and intervention plans were reviewed holistically and themes extracted for comparison with those from interviews and surveys. All documents were systematically numbered for reference at the end of the implementation period and

copies downloaded and saved on the researcher's computer in preparation for data analysis.

Interviews. Semi-structured interviews were conducted at the completion of the implementation term. I followed the techniques described by Creswell (2009) to develop an interview protocol (see Appendix G). Creswell's components for interview protocols include a heading, instruction for the interviewer to follow, 4-5 questions, 4-5 probes, an area to record responses, and a thank you. The interview questions are divided into two sections to address two different foci of the study: personalized learning and CoPs.

Personalized learning section. The personalized learning section of the interview protocol was created to identify specific strategies that participants implemented and pertinent data gathered to inform research question 1. I wrote the open-ended interview questions to correspond with the research questions and themes from the survey for consistency and a deeper understanding of why and how the intervention helped to develop value and efficacy for participants.

The questions asked teachers to reflect on their survey responses and provide examples for their selections. During the interview, participants were presented with a copy of their individual responses from the post-assessment survey. If there was an increase between the pre- and post-surveys, they were asked to share specific examples of how participation in the CoP enhanced their belief in their abilities to teach using a personalized approach. They were also asked to share which activities they felt best supported their development of a personalized learning approach. If their post-assessment survey responses indicated a decrease or status quo from the pre-assessment survey, they

were asked to reflect on the data and identify any further supports they needed to implement the strategy.

CoP section. The CoP section focused on the degree to which participation in the CoP added value for participants. I used The Value Creation in Communities and Networks framework developed by Wenger-Trayner, Wenger-Trayner, and deLatt (2011), to draft my questions. Data gathered was used to inform research question 2. The authors developed the framework to bridge the activities found within communities and networks with improved organizational performance. The framework includes five cycles of value creation with indicators to assess participant perception and stories that indicate the value they benefited from participating in the community or network. The five cycles of value creation are:

- Immediate value: members find value in engaging in activities with others who share similar concerns.
- Potential value: members gain new insights, forge relationships, and create resources that can be helpful in the future.
- Applied value: potential value inspires members to change the way they do things.
- Realized value: as a result of applied value, stakeholders are better served.
- Reframing value: the change might lead to a broader transformation in the field.

To assess the value of the CoP, I drafted five overarching questions, one for each value cycle. Participants were asked a question, then given follow up questions if appropriate. Interviewees also had the opportunity to request clarification on a question or to pass, if

they so desired. Interviews were recorded, transcribed, housed and password protected on the researcher‘s computer.

Researcher's journal. A researcher's journal (as detailed by Sagor, 2011) was kept during implementation. The purpose of the journal was to reflect on the CoP to analyze if it impacted participants as intended. The researcher's journal was used to compile details of the process and progress of implementation and to take detailed notes of what happened in the CoP. The journal was used as a tool to keep track of any deviation from the theory of action and the rationale for making these adjustments. The journal was housed on Google Drive.

Data analysis. To best address the study purpose and research questions, a combined approach to mixed methods data analysis was used in the Evaluation Phase. Ivankova (2015) explained that the goal of combined data analysis is to give more credibility to the study conclusions and to provide meta-inferences to inform the evaluation of the intervention. A descriptive statistical analysis was used in the quantitative phase, and an inductive approach to coding data was used in the qualitative phase.

Quantitative data analysis. Descriptive statistics were used to summarize the participation results in the CoP. Specifically, the analysis of quantitative data in the study was used to determine the impact of the CoP on teacher self-efficacy and organizational learning. The use of descriptive statistics in data analysis allows the researcher to identify trends and patterns in the data to uncover potential relationships between variables (Creswell, 2009; Ivankova, 2015). I used the measures of central tendency and variability to describe the sample and indicate general trends. I also used a paired t-test to look for

changes over time. The paired t-test allowed me to analyze the relationship between the independent variable (CoP) and the dependent variable (self-efficacy to implement a new learning approach). Before analyzing the data, I stated the alpha level. The null hypothesis was that there was no difference between pre- and post-survey scores, meaning there is no improvement. The results collected from the survey scores were compared to ascertain the effect size. Meta-inferences gathered from the survey were used to measure the degree to which the intervention increased teacher perception of organizational learning, as well as their efficacy to teach using a new model of instruction.

Qualitative data analysis. Qualitative data analysis included the segmenting of data into relevant categories (Creswell, 2009; Ivankova, 2015; Sagor, 2011). To best understand the qualitative data gathered in the study, I used a constant comparative method of coding. The nature of the constant comparative method is that it is iterative (Strauss & Corbin, 1998). As each new segment of data evolves, I compared it to the other segments of data. I began with the analysis of the raw data gathered from interviews, document collection, and the researcher's journal. I organized and prepared the data, and read through the data to get a sense of the collective data. I coded the data using emergent themes and generated a codebook to make the process more manageable as well as to ensure consistency through the review of different data collection types. The process of coding was iterative. To track the codes, descriptions, themes, and iterations, I used an Excel file with multiple sheets. The codebook housed in vivo codes to highlight participant experiences and to allow for the preservation of their stories and voice to inform subsequent action. Data interpretation consisted of five to seven broad categories

to establish conclusions about how participation in the CoP affected the perception of value and self-efficacy.

Mixed methods analysis. Once all of the data were analyzed according to either a quantitative or qualitative approach, a combined mixed methods data analysis was used. A combined mixed methods approach allowed the researcher to determine if the study strands converge or diverge when addressing the research question (Creswell, 2009; Ivankova, 2015). The results from both strands were interpreted side-by-side in a matrix. Meta-inferences were generated to help the researcher strengthen the conclusions of the study. These meta-inferences were used to determine the likelihood of future replication as well as improvements to successive iterations of the intervention. To determine if the research questions were answered, I triangulated the data collection. The triangulation of data supports the validity of research findings, strengthens meta-inferences, and answers research questions (Ivankova, 2015; Sagor, 2011). The data matrix in Table 2.5 provides a framework to align the research questions with the data collection to guide the integration of results.

Table 2.5

Data Triangulation Matrix

Research Question	Data Source 1	Data Source 2	Data Source 3
How does participation in a community of practice affect teacher self-efficacy to implement a new approach to teaching and learning?	Pre- & post-assessment survey	Participant interviews	Discussion posts
To what degree does participation in the community of practice provide value for participants?	Participant interviews	Document collection	Researcher's journal
How does teacher perception of organizational learning change after participating in the community of practice?	Pre- & post-assessment survey	Participant interviews	Researcher's journal

Quality assurances. A challenge of MMAR is ensuring the quality of the study due to the use of both quantitative and qualitative data. To ensure quality research, the MMAR researcher must evaluate the rigor of each strand, implement quality considerations in regards to the action research process, consider the legitimacy and quality of meta-inferences derived from the study analysis, and develop outcomes that stimulate change (Ivankova, 2015). The quality of this study was assessed through the trustworthiness of the qualitative data collection, the validity of the quantitative strand as well as action research process, the credibility of the data from both strands through triangulation, and the ability of the study to generate quality meta-inference.

Validity and reilability of the quantitative findings. Validity and reliability were used to determine the rigor of methodological procedures of the quantitative aspects of this research (Ivankova, 2015). The procedures I used for establishing validity of the questionnaire and the reliability of the surveys were discussed in detail in the

Reconnaissance Phase of this study. I used research from reputable sources for the surveys as well as cognitive interviews for the questionnaire.

Trustworthiness of the qualitative findings. To assess the qualitative research, Lincoln and Guba (1985) recommend assessing the trustworthiness of the findings. Credibility, transferability, dependability, and confirmability are the four indicators used to evaluate the rigor of qualitative studies. This study focuses on the use of credibility, dependability, and confirmability, to meet the criteria for qualitative rigor.

Credibility. Credibility is the degree to which the findings are believable and deemed truthful (Lincoln & Guba,1985). Consistent with the collaborative and participatory nature of action research, I used member checking to ensure that interpretations of the data collected accurately reflect participant views. Transcripts of the interviews, as well as course documents, were shared with participants for review.

Dependability. Dependability is the degree to which the findings are consistent and can be repeated (Lincoln & Guba,1985). To increase the dependability of this study, the methods and procedures were detailed in the researcher's journal so that the process can be repeated, if so desired. The journal was used to compile information through the implementation period, to record any deviations from the action plan, and note reasons for the changes. The journal was also used to record observations that may have impacted the study. I maintained the journal throughout the study. Additionally, I provided a detailed narrative of the findings in the final chapter of this study (Creswell, 2009).

Confirmability. Confirmability is the degree to which participant perceptions shape findings (Lincoln & Guba,1985). Both the detailed description of the findings and documentation in the researcher's journal ensure confirmability of the findings.

Confirmability is how the findings are supported by data and reflect the participant views and not researcher views (Lincoln & Guba,1985). I documented my personal attitudes and beliefs about the study as a means to clarify any bias I had in the researcher's journal. Keeping a detailed account of the study procedures and reporting documentary evidence in the final chapter of this study added transparency to my work.

Trustworthiness. The combined use of quantitative and qualitative data sources allow for a more reliable and valid intervention plan (Ivankova, 2015). The results from the data collection methods were triangulated to ensure credibility and confirmability. The use of multiple sources of quantitative and qualitative data improved the credibility and validity of the study and allowed for a more rigorous evaluation of the intervention. I triangulated the data by cross-checking themes from the interviews and documents with corresponding questions in the quantitative survey to lend credibility to the results. Data from the interviews and documents were detailed in a matrix for comparison. The comparison allowed for a deeper understanding of the results through the conformability developed through participant stories as well as provide a basis for dependability when replicating the study.

Quality of the mixed methods action research process. The recommended approach for assessing quality in MMAR is to assess using a conceptual model and framework that result in testing the validity of meta-inferences. Ivankova (2015) recommended that researchers address three sets of issues related to three quality assessment domains: (a) the methodological rigor of the quantitative and qualitative strands, (b) the quality of the research used in the action research cycle and, (c) the quality and legitimacy of the meta-inferences derived from the integration of the

quantitative and qualitative strands. I used a set of goals to guide quality assurances for each phase of the MMAR process. Integration of the three domains for quality assurance of this MMAR study are combined and illustrated in Table 2.6. The table also details the methods I used to assess the quality of the MMAR study.

Table 2.6

Quality Assessment of MMAR Study

Phase	Quality Assessment Criteria Goals	Method
Diagnosing	The study purpose, goals, expected outcomes, and research study are explicitly stated and understood by stakeholders.	Review and approval of action plan with campus leaders and study participants
Reconnaissance	A high level of rigor is present in the analysis of data and development of meta inferences that will inform the action plan.	Review and approval of action plan with campus leaders and doctoral committee members
Planning and Acting	The action plan will be implemented ethically through a consistent approach with collaboration from stakeholders.	Bracketing – researcher's journal
Evaluating	A high level of rigor is present in the quantitative and qualitative strands, action research process, and meta inferences.	Survey – content and discriminant validity; triangulation –credibility, conformability
Monitoring	Revisions to the intervention are ethical, and stakeholders are involved in encouraging the sustainability of the action.	Bracketing – researcher's journal outcome validity & catalytic validity used to inform successive iterations of the intervention; review of study results with stakeholders

Monitoring Phase

In the final phase of the framework for MMAR, study results and conclusions were shared with participants and leaders at the Ka Pilina site. Recommendations for revisions to the intervention plan were made based on the results of the Evaluation Phase. Should the CoP be allowed to continue beyond the scope of the study, the recommended

changes will be implemented and monitored to ensure that the study still meets organizational needs. Results and recommendations are discussed in Chapter 3.

Ethical Considerations

Before the start of the study, I secured permission as well as the support of leaders at the study site to conduct research during the specified term. The research questions and purpose of the study were shared with voluntary participants at the onset of the study. This method helped to ensure that both the researcher and participants understood the same purpose. Once the purpose was understood and participants agreed to join the study, they signed an informed consent form (see Appendix H) to acknowledge that their rights would be protected during data collection, along with their agreement to participate. During data collection, the identity of participants was protected through the use of participant identification codes on all documents and surveys gathered for review, to replace participant names or other identifiable marks. Participants used the same identification code throughout the study.

During data analysis, the researcher provided accurate accounts of the information through validation strategies discussed in the Quality Assurances section of this dissertation. The researcher presented the findings using unbiased language and without falsifying data or making fraudulent claims. For the duration of the study, the dissertation was made available to stakeholders, upon request so that they could determine the credibility of the study.

Timeline for the Study

Preparation for the study began in summer 2018 with obtaining approval for the study from the study site leadership team. Prior to the start of the intervention, IRB

approval was granted from the University of Kentucky. The intervention started in February 2019 and ended in May 2019. Table 2.7 details the timeline for the study.

Table 2.7

Actions to Establish a Community of Practice

Actions	Who	When	Data Collection/Analysis
Secure site approval	Researcher	Aug 2018	NA
Secure IRB approval	Researcher	Dec 2018	NA
Call for participants	Researcher or school leaders	Jan 2019	NA
Reconnaissance data collection	Researcher	Jan 2018	CoP & PD questionnaire
Introductory event in person	Participants facilitated by researcher	Feb 2019	Pre-assessment surveys, document collection, training agenda
Participation in CoP	Participants facilitated by researcher	Feb– May 2019	Discussion board posts, reflections
Affinity groups formed, action research planning	Participants facilitated by researcher	Late Feb 2019	Planning documents, reflections
Evaluate the CoP, data analysis	Researcher	May 2019	Post-assessment surveys, Interviews
Report study findings	Researcher	Dec 2019	NA

Summary

The purpose of this study was to examine the effects of a CoP on teacher perception of organizational learning and efficacy to teach using a new approach to teaching and learning. A technology-enhanced, personalized learning professional development pathway was used with the intervention model to help teachers gain

experience. A MMAR approach was used to develop and evaluate the study design and success.

A concurrent approach to data collection and analysis was used to develop meta-inference to determine the effects of participation in the study group (Ivankova, 2015). The research questions were answered through pre- and post-assessment surveys, document analysis, and participant interviews. Teachers were asked to gather and reflect on evidence, participate in cohort community activities, and provide program evaluation data. A combined mixed methods data analysis process was implemented to asses the degree to which the quantitative and qualitative strands merge. The quality of this study was assessed through the validity and reliability of the quantitative instrument, the trustworthiness of the qualitative data collection, the outcome validity of action research, and the inference quality of this MMAR.

Ethical considerations were maintained throughout the study, through the transparency of intent and the informed consent of all participants (Creswell, 2009). A detailed researcher's journal was kept to track field notes, record changes or deviations from the intervention plan, and to ensure that data collection and analysis was directly related to the research questions.

CHAPTER 3

RESULTS, RECOMMENDATIONS, AND REFLECTION

The purpose of this MMAR study was to examine strategies for professional growth and measure teacher self-efficacy based on participation in the professional learning experience. I used a collaborative network within a K-12 school setting as a means to provide high-quality professional development that enhances conditions for organizational learning at Nā ʻOhana Schools. Through the implementation of a community of practice (CoP), I embedded elements of organizational learning (e.g., knowledge construction and inquiry) to support teachers in the development of their instructional practice in the area of personalized learning.

This chapter begins with a discussion of the results from the Reconnaissance Phase of the study. The second section of this chapter includes a summary and discussion of findings from the Evaluation Phase of the study. I concluded the chapter with recommendations, study implications, and lessons learned.

Results from Reconnaissance Phase

During the Reconnaissance Phase, qualitative and quantitative data were gathered via a researcher-developed questionnaire and two surveys (i.e., the TSES and the Organizational Learning Survey). The data collected from the questionnaire and surveys were used to inform the planning and Acting Phases of the action-research cycle as well as to gain baseline data for comparison with a post-assessment conducted in the Evaluation Phase of the study. An overview of the pre-intervention survey data collected is shared in this section. However, a comparative discussion on pre- and post-data collection is found in the Evaluation Phase findings section.

Quantitative Findings

Quantitative data were collected via a questionnaire and two surveys: (a) the TSES and (b) the Organizational Learning Survey. The questionnaire consisted of multiple response questions drafted to gather data related to teacher motivation and preferences towards professional development sessions (see Appendix A). The two surveys consisted of questions rated on Likert scales and were intended to elicit participant perception of self-efficacy and organizational learning (see Appendix B). The primary reason for issuing the surveys during the Reconnaissance Phase was to gather baseline data before the start of the intervention, for comparison with post-intervention survey results.

Questionnaire data. The following questionnaire questions and statements were analyzed in the Reconnaissance Phase:

- *What strongly motivates you to participate in professional development offerings?*
- *In which PD models would you be willing to participate?*
- *What strongly limits your ability to participate in professional development offerings?*
- *Which of the following CoP components/activities would you like to see in a professional development program designed to help implement personalized learning approaches?*

In total, ten participants responded to the questionnaire during the Reconnaissance Phase. The results of the quantitative questions from the questionnaire are presented below.

Motivation. Respondents were given twelve items to select from to assess their motivation for participating in professional development sessions. Four items had an 80% frequency rate (n = 8), working with other teachers to benefit student learning, personal growth/interest, the ability to dialog with my coworkers to find out what is working for them and what is not, and relevancy to my classroom practice. The top four choices reflect intrinsic motivational factors. Other intrinsic factor responses include the opportunity to develop solutions to work challenges (n = 5) and the opportunity to share knowledge/resources (n = 3). The remaining responses focused primarily on extrinsic factors such as the ability to earn incentives (n = 6), career development (n = 6), time off to participate in the PD session (n = 5), expanding personal networks (n = 4), and future job opportunities (n = 1). Table 3.1 details the distribution of responses.

Table 3.1

Teacher Motivation for Participating in Professional Development

Variable	Frequency (N=10)	Percentage
Work with other teachers to benefit student learning	8	80%
Personal growth/interest	8	80%
The ability to dialog with my coworkers to find out what's working for them or what's not	8	80%
Relevancy to my classroom practice	8	80%
Ability to earn incentives or rewards (credits, degree, extra planning time, etc.)	6	60%
Career development	6	60%
The opportunity to develop solutions to work challenges	5	50%
Time off to participate in the PD during work hours	5	50%
Expanding my personal network	4	40%
Opportunities to share knowledge/resources	3	30%
Future job opportunities	1	10%

Barriers. Respondents identified potential barriers to participation in professional development activities from a preset list and also had the opportunity to add to the list via an open field. Timing (*n* = 8) and too many other job-related tasks (*n* = 7) were two options that were selected with high frequency. The remainder of the preset options all had a frequency selection of three or less, the results of which are presented in Table 3.2.

Table 3.2

Barriers to Participating in Professional Development Activities

Variable	Frequency (N=10)	Percentage
Other scheduled activities	8	80%
Too many other job-related tasks	7	70%
Too long of a commitment	3	30%
Lack of childcare	3	30%
Lack of support from administration	2	20%
Lack of incentives	2	20%
PD activity is too long	2	20%
Other	2	20%
PD session is not leveled appropriately	1	10%

Preferences. Teacher preferences for professional activity types varied in range from workshops (*n* = 10) to internships (*n* = 3). One individual listed “any and all” as a comment in the *other* field. Other popular choices were an online course (*n* = 8), conferences (*n* = 7), institutes (*n* = 7), learning communities(*n* = 7), and book/video studies (*n* = 7). Table 3.3 highlights the response rates for each activity type.

Table 3.3

Preferences Around Professional Development Types

Variable	Frequency (N=10)	Percentage
Workshop (one day/one topic)	10	100%
Online course	8	80%
Conference (one day/many topics)	7	70%
Institute (multiple days/one topic)	7	70%
Learning communities	7	70%
Video/book study	7	70%
B-credit classes	6	60%
Action research	5	50%
Blended course	5	50%
Mentoring/coaching	5	50%
Project teams	5	50%
Work groups/teacher teams	5	50%
Internship	3	30%
Other	1	10%

Elements of CoPs. The final multiple response question asked was regarding CoPs: *Which of the following CoP components/activities would you like to see in a professional development program designed to help implement personalized approaches?* All respondents selected *relevancy to your specific work setting* as a component of value. Respondents also expressed a desire for opportunities that would allow them to share resource with other teachers (n = 9), have the flexibility to choose content (n = 9), common purpose/vision (n = 8), work in teams (n = 8), informal setting (n = 8), and a good online platform for the CoP (n = 8). Table 3.4 details the frequency of selection for each element listed.

Table 3.4

Most Requested Elements of Communities of Practice

Elements of a CoP	Frequency (N=10)	Percentage
Relevancy to work setting	10	100%
Share resources with other teachers	9	90%
Flexibility to choose/modify content	9	90%
Develop a common purpose/vision	8	80%
Work as a team to plan projects, events, solutions	8	80%
Informal meetings/setting	8	80%
Good online platform for communicating when not able to meet face-to-face	8	80%
Have a say in when the PD team meets	7	70%
Open communication	7	70%
Build a sense of community with other teachers participating	7	70%
Share work-related knowledge with other teachers	7	70%
The ability to bring people in from the outside for additional support when needed	7	70%
Use action research	6	60%
Partner with other teachers/community members to achieve better results	5	50%
Shared goal	4	40%
Have a shared space to store resources (online)	4	40%
Build up a set of communal resources on PL	3	30%
Recognition for achievement/contributions	2	20%
Formal meetings/setting	1	10%

A fifth multiple response question was included on the questionnaire to aid in logistical planning for CoP meetings. Unfortunately, the data were too broad and varied to select one consistent meeting day and time throughout the entire intervention. Rather than use the data collected from this question, I opted to use a polling tool at the close of each scheduled meeting to determine the best date and time for our next face-to-face event. The polling tool allowed for flexibility with other impromptu events that came about during the school year.

Survey data. Both the TSES and Organizational Learning Survey were administered to gather data before the intervention for comparison later. Twelve teachers participated in the pre-assessment survey. Tables 3.5 and 3.6 display the descriptive statistics that detail the results of the surveys.

Table 3.5

TSES Pre-Intervention Collection

Grouping	N	M	SD
Student engagement	12	6.59	.85
Instructional strategies	12	6.8	.75
Classroom management	12	7.42	.98

To analyze the results of the TSES, I categorized the items according to the three factor groups found in the instrument: efficacy in student engagement, instructional strategies, and classroom management. Participants responded to 24 statements on a 9-point Likert scale. Choices in the Likert scale ranged from *1-none at all*, to *9-a great deal*. Responses in all three factor groups were above the median rating ($M = 5$).

Table 3.6

Organizational Learning Survey Pre-Intervention Collection

Grouping	N	M	SD
Psychological safety	12	4.44	1.14
Experimentation	12	4.31	.96
Leadership	12	5.83	.84

To analyze the results of the Organizational Learning survey, I categorized the items according to the three factor groups found in the instrument: psychological safety, experimentation, and leadership. Participants responded to 12 statements on a 7-point

Likert scale. Choices in the Likert scale ranged from *1-strongly disagree*, to *7-strongly agree*. Responses in all three factor groups were above the median rating ($M = 4$).

Qualitative Findings

Qualitative data in the Reconnaissance Phase was gathered via open-ended questions on the researcher-developed questionnaire. The purpose was to gain specific examples of characteristics of professional development programs that motivate teachers to participate. The findings presented provided insight that helped to shape the design of the study implementation.

Essential characteristics of quality professional development. Darling-Hammond, Hyler, and Gardner (2017) analyzed 35 studies to extract features of effective professional development programs. Their work yielded seven commonalities: content focus, active learning, collaboration, modeling of effective practice, coaching and expert support, feedback and reflection, and sustained duration. Through the analysis of data collected from the researcher-developed questionnaire, four of the seven elements were identified by participants.

The first open-ended question asked participants to describe their ideal professional development session or describe an especially successful experience they had in the past. The question intended to ascertain the elements they felt were beneficial or considered successful. During the analysis of data, three overarching themes emerged: a desire for access to a coach or field expert, active learning, and collaboration. The following sections present the results of respondents' comments through a description of those elements and supporting quotations.

Access to an expert. Darling-Hammond, Hyler, and Gardner (2017) list coaching and expert support as an element of effective professional development. They describe coaches as typically being educators that help to guide teacher learning in the context of their practice. Coaches employ strategies such as modeling, collaborative analysis of student work, facilitate dialog and discussion within groups, and share expert advice about content and evidence-based practices. Comments by participants in the study indicated their desire for access to experts. One respondent shared the desire for "knowledgeable, passionate, engaging, personable kumu (teacher/instructor) that also has real-life experience with the topic." A second faculty member expressed a want for "personal access to an expert where I can discuss specifics that are applicable to my teaching situation or classroom struggles."

Active learning. Themes associated with active learning in professional development include drawing on a teacher's prior knowledge and experience, allow teachers to choose their learning based on interest, experience, needs, and the use of reflection and inquiry (Darling-Hammond, Hyler, & Gardner, 2017). Active learning moves away from the traditional lecture-based model to one that engages teachers. Participant feedback included the request for opportunities that involved modeling practices and provided immersive experiences such as "being a student in a project-based classroom" and "hands-on, ʻāina (land) based, creative, and immersive." Others expressed a desire for sessions that provide "info I can apply to the classroom, right now" and "ones that apply to what we're focusing on and are hands-on," indicating a need for relevancy and personal interest.

Collaboration. Darling-Hammond, Hyler, and Gardner (2017) contend that the incorporation of collaboration in professional development is paramount for schools that want to create an engaged community of learners (i.e., Communities of Practice, Professional Learning Communities, interdisciplinary project teams). Collaboration can take on various forms; one-to-one, small group, grade-level divisions, school-wide, and even opportunities with members of the broader school community. Several respondents highlighted themes related to collaboration, as they asked for opportunities that would "allow for teacher collaboration" and foster "pilina (relationships), engagement with learning, dialogue, and reflection."

Characteristics that help the implementation of new strategies. A second section of the participant questionnaire asked participants about their confidence in using a personalized approach to learning in the classroom. The following questions were analyzed:

1. *What do you need to happen in order to feel confident in your ability to use a personalized approach to learning in your classroom?*
2. *What other support (personnel, resources) might you need?*
3. *What is one thing you could do to further the use of personalized learning in your classroom?*
4. *What is one thing you could do to further the use of personalized learning in our school?*

During the analysis of data, three themes emerged: time, safety, and support. The following sections detail the results.

Safety. Personalized learning is a new pedagogical approach for many at the school, and therefore requires a change from current practice. Fullan (2001) identified the fear of the unknown as one potential barrier to change. The need to feel that it is okay to take risks was important to participants. One respondent noted that they would like "freedom from admin to take chances," and another said that "being able to fail forward without getting critiqued" would support their implementation of new strategies.

Time. Survey participants expressed the need for time if they are to implement new strategies. One teacher stated, "time to plan it out, organize myself and do more research, to make the best use of it." Another respondent shared, “time to implement, try, adjust, and retry.” Similarly, others stated “time,” “make time for it,” “opportunities to try,” and “supportive schedules” as paramount.

Support. The third theme that emerged related to support included both personnel and physical resources. In terms of personnel, participants highlighted a request for “mentors,” “reflective conversations with peers,” and the ability to “reflect and tuning with a group.” Respondents also identified a want to “create a structure or system” for personalized learning. According to one teacher, there was a need for "assistance in creating a plan with clear objectives, timeline, assessments, checkpoints, and management."

In terms of resources, teachers listed “online resources and tools,” “step-by-step, how-to ideas,” “see examples of how other teachers are doing it, ideally in same student level and content area,” “defined competencies," "smaller class sizes,” and “ a bank of suggested examples of personalized learning that I can easily adapt for my students and content area.” One participant responded, “I need to feel more comfortable with the idea

of multiple assessments. I also need to feel solid that the personalized approach will not result in students taking advantage of an easier route or feeling that the differentiation in activities is unfair." Another respondent shared, "learn more about what personalized learning really means and strategies I can use to put students in the driver seat of their learning." These responses demonstrate the need for both physical resources and coaching through the process.

Reconnaissance Phase Discussion

Data collected during the Reconnaissance Phase provided a baseline assessment of teachers' self-efficacy beliefs in the use of personalized learning approaches, their perception of organizational learning in their school, and input on how to design a CoP to support teachers in implementing personalized learning in their classrooms. The insights gathered during this phase of data collection were critical for the Planning and Acting Phases of the action-research study. This section presents the interpretations and inferences drawn that allowed for a customized intervention plan during the Acting Phase.

Survey collection discussion. Quantitative data was collected from the TSES and Organizational Learning Survey, primarily for comparison at the end of the study. However, it was noted that in all three categories, the mean ratings were above 6, indicating an above-average degree of self-efficacy for the group. The factor grouping that had the highest score was classroom management with a mean of 7.54, equating to *quite a bit* on the Likert scale. The results of the survey support the work of Tschannen-Moran and Woolfolk Hoy (2007), in that the more years of experience a teacher has, the higher their self-efficacy. The group from Ka Pilina supports these findings with a mean

representation of just over 20 years of service, more than the three or more years recommended in the Tschannen-Moran and Woolfolk Hoy study.

Means from the Organizational Learning Survey were above the mean mark of 4 (neutral). This suggests that while there may be areas of discontent or concern by teachers, overall, the organization is trending towards a more positive perception of organizational learning. This also leaves room for improvement and should be considered as an area of research for future longitudinal studies. An integrated report of the results of the TSES and Organizational Learning Survey can be found in the Evaluation Discussion section of this study.

Questionnaire collection discussion. Both quantitative and qualitative data were collected from the researcher developed questionnaire. The responses were used to inform the development of a CoP to support teachers in using a personalized approach to learning. The quantitative questions allowed respondents to select from a list of options and to include any items they felt were missing. Regarding motivation for participation in professional development opportunities, teachers highly ranked activities that allowed for interaction with and support from other teachers. This supported the reasoning for using a CoP as a foundation for the professional development experience and was further strengthened by the data from qualitative responses that could be categorized into three themes. Teachers expressed their desire for professional development activities that provided access to a coach or field expert, active learning, and collaboration. The intervention was designed to support teacher motivation through collaboration amongst participants via discussions and activities, by allowing teacher choice in project

development, and providing time for one-to-one sessions between the facilitator and teacher.

The data provided other considerations for this study. Time was an important factor with a high number (n = 8) selecting other activities (work or personal) as a barrier to participating in professional development. Special consideration was given to the design of the intervention to mitigate this potential barrier (e.g., two optional meeting times per module, online synchronous sessions, 90-minute maximum sessions). Another set of preferences that emerged were around the format of the session with workshops, online courses, conferences/institutes, and learning communities being selected with a higher frequency. Conferences and institutes were not offered as an option to minimize class disruption during the intervention period. As a substitute, experts in the field were brought in to discuss and share their knowledge.

When asked what elements they would like to see in a CoP, respondents rated relevancy to work setting, sharing of resources with other teachers, and flexibility with content as their top choices. In a final set of qualitative responses, teachers identified the need for time, support, and safety to experiment as ideals for successful integration of what is learned in professional development as it translates to classroom practice. These factors were all considered when building each online module, and the lessons and activities were designed accordingly.

Design of the intervention. The intervention (Acting Phase) was based on the data gathered during the Diagnosing and Reconnaissance Phase. The Diagnosing Phase helped to establish the problem of practice and overall study design. Data collected from the Reconnaissance Phase informed the structure and timing of the intervention. Teacher

responses indicated a need for adequate support, peer collaboration, relevancy, and flexibility. Each component was deliberately included in the course to design to ensure teacher needs were met.

Support and collaboration. In terms of support, teachers indicated a desire for both personnel and physical resources as well as time to converse with their peers (e.g., mentors, speaking with other teachers, assistance creating a plan with clear objectives, assessments, and management, online resources and tools, and step-by-step ideas, examples from other teachers). To ensure an adequate level of support throughout the intervention, I shared contact information and office hours with participants. I also posted regular weekly announcements and emailed the cohort consistently throughout the four months. I scheduled face-to-face or online synchronous sessions at a maximum of three-week intervals to foster interaction and serve as class checkpoints. During each session, we had discussion points and time for sharing. Additionally, on weeks that we did not meet synchronously, there were conversations taking place on the learning management system discussion board.

Relevancy. Each module also was supported with relevant resources. To ensure that all participants had tailored support, I used discussion responses to craft individual resource support lists for each participant. Each list was based on interest, learning goals, and classroom needs. Participants were encouraged to add to their own lists and look at the lists of other students. As each teacher worked on their implementation plan, I continued to add resources to their lists and provide feedback. The implementation plan was created to be open-ended so that teachers could decide for themselves not only the

content focus but also the degree and depth at which they would test out personalized learning in their own situation.

Flexibility. Because the intervention took place during the second semester of the school year and teachers were asked to participate outside of their regular work hours, I was purposefully flexible with meeting times and types as well as deadlines. Before each synchronous session, I sent out a Doodle poll to secure the best date and time options. While I had initially planned to have our first session on a Saturday for four hours, it was evident based on the responses that less than half of the group could participate. Instead, I planned a 90-minute synchronous session and added an introductory module (prior to module 1) that focused on the sharing and team building that would have taken place during the half-day workshop. I was also intentionally flexible with due dates in the modules. Table 3.7 highlights the adjustments I made from my original action plan to what was implemented.

With each teacher working on their own implementation plan, and each plan consisting of different methods, practice, and activities, I allowed teachers to implement when it worked best for their own classroom settings. I also provided optional activities for those with more interest and time to explore, but without adding to the required workload. Appendix F includes the scope and sequence for the final intervention and an outline of the modules, discussion points, and activities, including the revisions noted in Table 3.7.

Table 3.7

Changes in Plan of Action

Intended Activity	Change in Implementation	Reason for Change
Opening workshop (4 hours) to build relationships	90 min face-to-face meeting & introductory module	Many participants were unavailable on the potential workshop dates
One synchronous online session per module, in the afternoon	Additional synchronous online session per module, in the evening hours for those that could not attend afternoon session.	Some participants had commitments in the afternoon (e.g. coaching), while others wanted time in the evenings for family
Small group research activity	Removed due to low participation – lack of time	Meeting times continued to be a challenge throughout the intervention
Module activities	Modules were built with a core set of activities, then additional activities were added for those that wanted a deeper dive	To give teachers more autonomy, choice and pace setting of how and what they were learning about personalized approaches
Resources for all in each module	Created a personalized playlist for each participant with resources relevant to their topic of study	Offer teacher more targeted guidance and support based on their feedback and implementation plans

Evaluation Phase Results

During the Evaluation Phase of this study, both quantitative and qualitative data were collected about the intervention. Two surveys, seven semi-structured interviews, two document types, and a researcher's journal were reviewed to gain an understanding of participant perceptions of organizational learning, the CoP, and their efficacy to teach using a new approach to teaching and learning. Inferences drawn from the data will be used to inform future iterations of the intervention. The results from data analysis are presented in the following sections.

Quantitative Findings

Two surveys were administered both pre- and post-intervention to collect quantitative data. The TSES was issued to collect data on teacher self-efficacy. The Organizational Learning Survey was used to gather data on teacher perception of organizational learning at the school.

Teacher sense of self-efficacy. The TSES was administered to participants for a second time after the study period. The intent was to determine a change in the three factor groupings regarding self-efficacy: student engagement, classroom management, and instructional strategies. Seven participants responded to both the pre- and post-assessment surveys. Descriptive statistics, significance, and effect size were calculated for all 28 survey questions. Significance was calculated via a paired t-test ($p < .05$). The effect size was determined using Cohen's *d*. An effect size of .8 is considered large, .5 medium, and .2 small (Cohen, 1988).

Student engagement. Data from the student engagement factor grouping is presented in Table 3.8. None of the responses to the eight questions in the group demonstrated a significant change between pre- and post-intervention scores. The calculation of effect size showed a small effect for all seven questions and a medium positive effect size in just one question. The two responses that garnered the largest positive increase and positive effect size from pre- to post-assessment scores were *how much can you do help students value learning* ($d = .6$) and h*ow much can you do to foster student creativity* ($d = .48$), both with a .86 gain in score. One question in the set showed a slight decrease from pre- to post-assessment means with a .14 drop and a small effect size ($d = 1.1$).

Table 3.8

TSES Student Engagement Post-Intervention Results

Student Engagement Factor Grouping	***Pre* M (SD)***	***Post* M (SD)***	***Gain Score***	***P***	***Cohen's d***
How much can you do to get through to the most difficult students?	6.57 (1.72)	6.86 (.90)	.29	.65	.23
How much can you do to help your students think critically?	6.43 (1.13)	6.29 (1.49)	-.14	.81	.11
How much can you do to motivate students who show low interest in schoolwork?	6.43 (1.51)	7 (1.41)	.57	.17	.39
How much can you do to get students to believe they can do well in school?	7.43 (1.51)	7.57 (.976)	.14	.60	.11
How much can you do to help students value learning?	6.14 (1.68)	7 (1.16)	.86	.29	.6
How much can you do to foster student creativity?	6 (1.92)	6.86 (1.68)	.86	.25	.48
How much can you do to improve the understanding of a student who is failing?	6.57 (.79)	6.71 (1.25)	.14	.82	.13
How much can you assist families in helping their children do well in school?	6.57 (.98)	7 (1.0)	.43	.29	.43

Note. *n=7.

Classroom management. Results from the classroom management question group showed an overall downward trend from pre- to post-assessment scores. Three questions showed a slight gain from pre- to post-means, but did not yield any significance; *to what extent can you make your expectations clear about student behavior* experienced a gain score of .29, both *how well can you keep students from ruining an entire lesson* and *how well can you respond to defiant students* had a gain score of .43. Two questions showed no change from pre- to post-assessment scores (d = 0; p = 1). Three questions showed a decrease from pre- to post-assessment scores. Regarding controlling disruptive behavior, there was a decline of .71 from pre- to post-assessment. The areas of establishing routines

and following classroom rules both reflected the same mean score decline of .43. Table 3.9 details the questions and results.

Table 3.9

TSES Classroom Management Post-Intervention Results

Classroom Management Factor Grouping	*Pre* M (SD)*	*Post* M (SD)*	*Gain Score*	*P*	*Cohen's d*
How much can you do to control disruptive behavior in the classroom?	8.14 (.90)	7.43 (1.4)	-.71	.14	.6
To what extent can you make your expectations clear about student behavior?	7.86 (1.86)	8.14 (1.07)	.29	.46	.18
How well can you establish routines to keep activities running smoothly?	8 (1.53)	7.57 (1.27)	-.43	.48	.31
How much can you do to get children to follow classroom rules?	7.71 (.95)	7.29 (1.5)	-.43	.29	.33
How much can you do to calm a student who is disruptive or noisy?	7.29 (1.38)	7.29 (1.5)	0	1	0
How well can you establish a classroom management system with each group of students?	7.57 (1.39)	7.57 (1.13)	0	1	0
How well can you keep a few problem students from ruining an entire lesson?	6.71 (1.89)	7.14 (1.07)	.43	.53	.63
How well can you respond to defiant students?	7 (1.29)	7.43 (1.27)	.43	.41	.34

Note. *n=7.

Instructional strategies. The most positive growth from pre- to post-intervention responses was found in the instructional strategies question set. Statistics for the instructional strategies grouping are found in Table 3.10. Two questions showed significance as well as a medium or large effect size. The question, *to what extent can you craft good questions for your students,* presented a significance value of p = .05, and a medium effect size of .69. The question, *how much can you use a variety of assessment strategies* showed a significant difference between pre- and post-intervention, p = .05. The effect size calculation demonstrated a large effect, d = 1.3. One question, *how well*

can you implement alternative strategies in your classroom, demonstrated a small effect size, d=.26. The remaining five questions showed low significance and medium effect size, and data are presented in Table 3.10.

Table 3.10

TSES Instructional Strategies Post-Intervention Results

Instructional Strategies Factor Grouping	***Pre*[a] *M (SD)***	***Post*[a] *M (SD)***	***Gain Score***	***P***	***Cohen's d***
How well can you respond to difficult questions from your students?	7 (1)	7.71 (1.25)	.71	.14	.63
How much can you gauge student comprehension of what you have taught?	6.86 (1.35)	7.57 (.98)	.71	.22	.6
To what extent can you craft good questions for your students?	6.57 (1.13)	7.29 (.95)	.71	.05*	.69
How much can you do to adjust your lessons to the proper level for individual students?	6.14 (1.21)	7.14 (1.35)	1	.13	.78
How much can you use a variety of assessment strategies?	5.86 (1.21)	7.14 (.69)	1.29	.05*	1.3
To what extent can you provide an alternative explanation of example when students are confused?	6.71 (.76)	7.29 (.95)	.57	.32	.67
How well can you implement alternative strategies in your classroom?	7.14 (1.46)	7.43 (.54)	.29	.67	.26
How well can you provide appropriate challenges for very capable students?	6.71 (1.60)	7.71 (1.11)	1	.25	.73

Note. [a]n=7. *p < .05, two-tailed.

Organizational learning survey. The Organizational Learning Survey was administered for a second time at the conclusion of the study to collect information related to teacher perception of organizational learning at the school. Seven participants responded to both the pre- and post-assessment surveys. Descriptive statistics, significance, and effect size were calculated for all twelve statements. Significance was

calculated via a paired t-test ($p < .05$). The effect size was determined using Cohen's *d*. An effect size of .8 is considered large, .5 medium, and .2 small (Cohen, 1988).

Significant changes were found for four of the twelve survey statements: *my principal invites input from others in discussions* ($p = .02$), *my principal asks probing questions* ($p = .07$), *my principal listens attentively* ($p = .04$), and *my principal encourages multiple points of view* ($p = .02$). Data from all four statements indicated a negative change from pre- to post-assessment. The negative change was true for ten of twelve statements in the survey. Two statements reflected no change from pre- to post-assessment scores.

The effect size for the ten statements with a change in score from pre- to post, varied from small to large. One statement had a large effect size: *my principal invites input from others in discussions* ($d = .87$). Four statements had a medium effect size: *this school has a formal process for conducting and evaluating experiments or new ideas* ($d = .56$), *my principal asks probing questions* ($d = .68$), *my principal listens attentively* ($d = .72$), and *my principal encourages multiple points of view* ($d = .72$). The remaining seven statements presented a small effect size. Table 3.11 shows the descriptive statistics, effect size, and significance for all twelve statements.

Table 3.11

Organizational Learning Survey Results

Domain	*Pre*[a] *M (SD)*	*Post*[a] *M (SD)*	*Gain Score*	*P*	*Cohen's d*
Psychological Safety					
In this school, it is easy to speak up about what is on your mind.	4.29 (1.70)	4.29 (2.06)	0	1	0
People in this school are usually comfortable talking about problems and disagreements.	4.14 (2.04)	4.14 (2.48)	0	1	0
People in this school are eager to share information about what does and doesn't work.	5.57 (0.54)	5 (1.92)	-.57	.44	0.4
Experimentation					
This school experiments frequently with new ways of working.	4.43 (1.27)	4.14 (2.06)	-.29	.6	.16
This school experiments frequently with new instructional practices or strategies.	5.14 (1.22)	4.29 (2.29)	-.85	.2	.46
This school has a formal process for conducting and evaluating experiments or new ideas.	3.86 (1.77)	2.86 (1.77)	-1	.28	.56
Leadership that Reinforces Learning					
My principal invites input from others in discussions.	5.43 (1.13)	4.14 (1.77)	-1.29	.02*	.87
My principal acknowledges his or her own limitations with respect to knowledge, information, or expertise.	4.29 (1.89)	3.86 (1.57)	-.43	.65	.25
My principal asks probing questions.	5.29 (1.11)	4.14 (2.12)	-1.15	.07*	.68
My principal listens attentively.	5.43 (1.51)	4.14 (2.04)	-1.29	.04*	.72
My principal encourages multiple points of view.	5.43 (1.4)	4.14 (2.12)	-1.29	.02*	.72
My principal criticizes views different from his or her own. (reverse coded)	4.29 (1.25)	4.57 (2.23)	-.28	.74	.15

Note. [a]n=7. *p < .05, two-tailed.

Qualitative Findings

The goal of the qualitative data collection was to gather perspectives and recommendations related to the CoP professional development sessions and to capture perceptions of teacher self-efficacy and organizational learning. Qualitative data were gathered through a review of documents collected during the intervention, semi-structured interviews conducted after the intervention, and a researcher's journal that was kept throughout the intervention. There were two document formats used for collection during the intervention period: discussion posts and an implementation plan. The purpose of using the course discussion board to collect qualitative data was to provide evidence of community interaction, self-reflection, and growth. The purpose of using the implementation plan as evidence was to demonstrate the use of the pedagogy taught within participants' classrooms and their reflection of the integration of personalized learning. The semi-structured interviews were formatted to elicit a deeper understanding of why and how the intervention helped to develop value and efficacy for participants. The researcher's journal served as a way to document the productive discussion that took place during the synchronous sessions and to track the flow of the intervention.

To focus the review of qualitative data sources, I used the three qualitative guiding questions written for the Evaluation Phase to organize comments:

1. What are teacher perceptions of the use of a CoP for professional development?
2. Which activities within the CoP did teachers find best supported their growth and efficacy towards using new teaching and learning approaches in the classroom, if any?

3. What degree of value have teachers gained in participating in the CoP and what are examples of the experience gained at each level identified by the teacher?

The findings are described by examining each research question. Themes were extracted and grouped according to the corresponding question.

Perceptions of a CoP for professional development. The final discussion prompt asked participants to reflect on their self-efficacy to teach using a new approach to learning after participating in the CoP. Three over-arching themes emerged from the data related to participant perceptions of engaging in a CoP: (a) support while trying something new, (b) reflection on practice, and (c) being part of a community. Comments from the interview questions related to teacher confidence in implementing personalized learning and engagement with the CoP presented additional support for the three themes presented.

Trying something new. Teachers expressed their appreciation for the ability to work something new in their classrooms. One teacher wrote,

> I have a better understanding of what personalized learning means, and to me, it's about giving students more ownership and responsibility for learning. Being in this course has helped me to be more open to releasing control in my classes.

Another respondent stated that participating in the CoP, "allowed me to implement PL in a non-threatening way, in my own way."

A follow-up prompt during the interviews allowed teachers to share some examples of why they felt more confident in their ability to implement personalized learning. Participants noted specific activities from within the CoP that offered personalized learning strategies they could use and suggestions for ways in which they implemented personalized learning in the classroom. Participants asserted that the

discussion board prompts and synchronous classes provided time for both reflection and learning from others in the CoP as well as from guest speakers.

Part of a community. Through both interviews and discussion posts, teachers acknowledged the benefits of being a part of a group that learned and experimented together. One participant said, "The opportunities to share with cohort members were helpful. I realized we are in the same position of trying out new things." Another commented, "I like that people were able to share their experiences or mana'o (thoughts) in the discussion threads. It helped me learn through their experiences." Hearing of both successes and failures was encouraging to one teacher who noted,

> It was nice to hear other's stories. To hear it from the beginning & the struggles, and not just when you go to a school or read an article on how everything was just so perfectly done. It was nice to know that other people struggled, and to hear what their struggles are.

Reflection on practice. Reflection emerged as a means that supported the growth of teacher self-efficacy in the document collection and interviews. Teacher comments included, "opportunities for reflection are necessary," and "I appreciated the thinking and reflecting nudges that assignments provided." Aside from self-reflection, teachers also reflected on their practice and the use of data to inform changes. One teacher shared, "It has definitely given me the opportunity to reflect on my current practices and use data (student feedback) to drive the changes that would best benefit my students." A second teacher stated that she felt better able to empathize with students as learners through participation and reflection.

Activities to support efficacy to use a new approach to learning. Participants were given several opportunities to share feedback on events in the CoP through document collection as well as in section one of the interview questions. Prompts were

focused on activities they found beneficial, versus those they did not, which activities they would like to see in subsequent offerings, and those that helped to develop their confidence with using the approach within their classrooms. Three broader themes emerged through the analysis of data: resources, support, and personalization.

Resources. According to study participants, the support provided by both the instructor and other classmates were beneficial to their learning. All seven of the teachers that engaged during the entire length of the study made mention of the aid the resources afforded them during their classroom implementations. While a general appreciation for the resources was expressed, a website for tips and strategies during the first 20 days of personalized learning implementation in a classroom was cited by four teachers. One commented, "I appreciated *The first 20 days of personalized learning* (resource), being able to peek into each area. Each one was concise, allowing me to dive deeper into an area if I wanted to. It is not overly wordy, and there are so many options."

I created a class resource toolbox as a place for teachers to store links to useful websites they found, with brief descriptions, so that other community members could view and use the material. All community members had access to view each other's lists and were encouraged to review them and give feedback if appropriate. Teachers had the following comments, "the class toolbox of resources was very beneficial," and "I want to copy what we contributed and add more to it to share with others."

Support. Several comments illustrated the support received from the instructor through the duration of the CoP. On participant stated, "I definitely liked that you were able to provide great insight and suggestions." Another teacher reported, "your feedback was super helpful. I liked my 1:1 times with you because then it specifically addressed

where I was at and what I needed answered." Teachers also expressed their appreciation for support received from other CoP members. One respondent stated, "I appreciated and enjoyed having group conversations." Another teacher said, "I like the relationships and conversations here." A third teacher expressed appreciation for "conversations outside of the usual teacher teams."

Personalization. To ensure each participant received the curriculum they needed to test out an aspect of personalized learning in the classroom, the instructor modeled the approach and created a personalized resource playlist page for each participant based on information shared in the first module. One teacher shared,

> I literally pulled resources immediately from your playlist to implement the next day. They helped me to validate some things that I was doing and to stretch my thinking on things from conferencing to the organization of conferences and organization of implementation and management.

A second teacher stated, the playlist "gave me little ideas and tips on how to encourage them to be more independent. I liked all of the readings shared." Another participant specified that she liked how the class was personalized for each teacher and that "we could focus on what we wanted to focus on to meet our need." She went on to share that it also forced her to be more accountable for her work because each implementation plan was unique to each teacher.

Degree of value gained through participating. The guiding question for the Evaluation Phase was drafted to inform research question number two. The question asked, *what degree of value have teachers gained in participating in the CoP, and what are examples of the experience gained at each level identified by the teacher?* To assess the degree of value, I used the value creation framework drafted by Wenger, Trayner, and De Laat (2011), in conjunction with participant responses received on the discussion

board, implementation plan and during the interview phase of data collection, as well as observations noted in the researcher's journal. The next sections provide a brief synopsis of the framework and the qualitative data to support the assessment of value developed by CoP participants, followed by a presentation of data to illustrate degrees of value achieved through the CoP.

Wenger, Trayner, and De Laat (2011) developed a conceptual framework for assessing the value of learning enabled by involvement in CoPs and networks. Wenger, Trayner, and De Laat distinguished five levels of value creation to account for what is created through the community or network. The five levels are immediate, potential, applied, realized, and reframing. They are defined briefly in each of the related, subsequent sections.

Immediate value. The first cycle, immediate value, includes activities such as tip sharing, discussing successes and failures, helping a colleague problem solve, or conducting a research project. Immediate value was observable throughout the intervention period. Each module was prepared with a bank of resources, time for synchronous, face-to-face sharing, and interaction in the discussion board to support the development of immediate value in the CoP. This was a consistent format from the first through the final module. As mentioned in the Activities that Support Self-Efficacy section, all seven participants expressed the value of the resources available in their responses to both interview questions and discussion board prompts. Participants indicated their use of various activities in the classroom to try to establish a personalized learning experience for their students. Based on articles and resources shared, teachers were asked to develop implementation plans and document student learning as they

experimented with personalized approaches. The implementation plans serve as evidence, and one excerpt from the use of resource playlists is shared as an example of immediate value generated from the CoP.

> The two most important things I learned from trying this personalized learning strategy are that 7th graders still want/need interaction with the teacher, and students need more practice with these types of independent learning structures. I was hoping that the use of the playlist would free up my time during class so that I could focus on students who were ready for next steps. However, I feel like I spent more time trying to get the reluctant learners to access the links in the playlist and read the directions carefully. Those students needed a lot more monitoring and oversight than I anticipated. One solution to students needing more teacher interaction would be to include more of my personal screencasts I have recorded over the years. That way, students will still have their teacher explaining things to them. I could also create a FAQ video with answers to the common questions students asked throughout the unit.

Immediate value was also present in the CoP through participant interaction with one another. One participant shared,

> I think what I realized this year is really like being able to bounce ideas off of like-minded teachers. Um, I think it's really Inspirational, and I think we really get a lot from each other, and so I think that's what we were talking about yesterday, being able to have that community.

Others mentioned they liked "bouncing around" ideas with other participants. A teacher commented, "because I was actually doing it simultaneously, I appreciated the support and the ability to be able to, as soon as I had a question, be able to reach out for answers and support."

Potential value. The second cycle is potential value. Potential value occurs when the knowledge shared in a community is not immediately realized. Potential value was also observed through the sharing of resources and community building. From the researcher's journal, notes during an online synchronous session revealed a desire for more professional development experiences that allow teachers to experience new styles

of learning as they would like their students to experience. Based on the theories presented in the CoP, teachers offered suggestions on ways future opportunities could be shaped to incorporate knowledge gained from the CoP. Examples offered were: change staff meetings to be staff discussion; the six thinking hats activity shared could be used to provide personalization during staff meetings and or workgroup sessions; and a desire for more experiential learning opportunities.

At the final CoP face-to-face meeting, teachers shared their implementation projects and reflected on related events. Again, the researcher's journal provided an example of the community contributing to the body of knowledge. As one teacher shared her incorporation of passion projects in her class, she talked of both the joy and struggle she had with student-led conferences. She explained that because all the students had individual areas of focus, she carved out class time to meet with students to receive project updates and support students as needed. The conferences took more time than she anticipated, yet she persisted because she felt they were a critical component to support the success of her students. Another teacher also shared her struggles with student conferencing, and the two planned to meet on their own to compare the process in more detail. Both teachers expressed their intentions to keep using student conferences in their classes and improve the process.

Applied value and realized value. Cycle three, applied value, involves changes in practice. Changes include adapting knowledge to a new context, such as implementing an idea or innovation. Cycle four encourages performance improvement based on the reflection of changes in practice that occurred in cycle three. In the realized cycle, it is essential to reflect on what effect the application of knowledge is having on what matters

to stakeholders. The implementation of a new practice in the classroom and reflection on the action was encouraged and documented through the development of an implementation plan and reflection, discussion board posts, and interview questions.

During the final face-to-face session, participants shared their projects and received feedback from others in attendance. Teachers implemented various aspects of personalized learning from flexible learning spaces (3 teachers), personalized playlists (1 teacher), learner profiles (1 teacher), and individualized student projects (2 teachers). As a part of the sharing, teachers were asked to identify areas of success and improvement, and ideas for continuing the use of personalized learning beyond the CoP. Areas of success included projects that involved parents and other school support staff, the variety and choice afforded to students, and meaningful feedback from students. One area for improvement involved the need for more time to adjust the intervention to be more efficient. For example, one teacher shared, "This was their first experience using a playlist, so the majority of my students needed more structure and accountability pieces." All teacher reflections included ideas for future iteration. One teacher noted plans

> To revise the research writing playlist so that my instructions are clearer and simplified. Some students complained that the format was confusing. They wanted to learn the information, apply the skills they learned, then move on to the next set of information.

Another instructor shared that common meeting times between herself, and other support staff was difficult. "I have been just collecting feedback via email, phone, and/or progress reports. I think for the tier 3 students, it would be really beneficial to sit down with all kumu (teachers) and possibly parents and students as well."

In a Discussion Board prompt during module 4, teachers were asked to share an aspect of personalized learning that they implemented in their classroom. While all of the

post participants had a more comprehensive implementation plan, they each shared one smaller facet of their project for feedback from peers. They applied what they learned through the development of lessons that included goal setting, co-creating rubrics with students, student self-assessment, and identifying learning needs. One respondent discussed her use of goal setting with students and identified the need to start her next school year with consistent, short term goal setting tasks, modeling, providing exemplars, and organizing playlists for students. In response to her post, one of her peers shared, "I find myself trying to rush through setting things up to get to teaching skills and concepts, but it's hard to move forward until certain things are in place. Goal setting is definitely one of them. I need to also remember to allow time for students to not only set goals but reflect on them as well."

A third method of collecting data to support achievement at the applied and realized levels of value was through the following interview questions:

1. What difference has participating in the CoP had on your classroom practice?
2. What difference has it made in your ability to achieve what matters to you in your teaching?
3. What effect did the implementation of new skills have on your classroom*?*

One teacher shared that a significant change for her was,

> Letting go of control & letting the kids have more say about how they do stuff, even negotiating, I am more open to negotiation with them. I had one, top-notch kid, but for one reason or other, his grade wasn't what he would have liked it to be, and I know that he's very capable, but he came to see me in private, and he was like so Kumu (teacher) if I do… Before I would have been like no, this is what you earned, this is what you get, but I felt like there were things that were missing that maybe I didn't assess that he could have shown me in another way, and so I gave him the opportunity. So more open and less controlling.

Another teacher shared that the CoP helped to build her confidence and courage to try something new, different, and ambitious. It also led to the development of her own classroom CoP.

> With students for sure relationships, because we struggled together & we were in the pit together of it, and we could empathize with each other, they were gracious with me and me with them as I went through my learning journey alongside them. Um conferencing was super valuable around something that was important to them and those one-to-one conferences were enlightening as they went through their struggles you know and people not getting back to them or schedules not working out or whatever it was um I feel like just our professional community that helped to just grow connection with other people who were wanting to do similar things.

Reframing value. The reframing value cycle is achieved when the learning forces the redefinition of success criteria. This includes a departure from the existing structure to create a new framework based on the redefined measures of what is important. For two teachers at the same division, participation in the CoP informed decisions beyond the scope of their classrooms. While it is difficult to say with certainty that given the data provided, the CoP did achieve a level of reframing through the study period, it is possible to present qualitative data that supports the move towards the creation of a new framework based on redefined measures of success.

During the interview phase of data collection, the two aforementioned respondents were interviewed separately. They are both teachers in the same content area at different grade levels. Their comments allude to potential changes in course offerings for the next term, based on insight and experience they gained through participation in the CoP. During a team meeting, a discussion emerged about the continuation of advanced and general ability groupings for students. The first teacher articulated, "By being in this class, I had some mana'o (thoughts) to give, and I said if we want to try to

move to PL, why are we labeling the classes?" She also shared that a decision was eventually made to not do groupings for English and instead move to a humanities focus that would allow the English and social studies teachers to coordinate curriculum. The second teacher also spoke of the move to a humanities focus at her grade level and was excited to share that she already had conversations with the social studies teacher about the integration of personalized learning and passion-based projects.

Another set of comments from one of the same teachers expressed a feeling of optimism that other teachers would be interested in what she had tried and possibly want to try something new themselves. She hosted an expo night for students to present their projects to their parents and the school community, which was well attended. She commented, "Expo night was something that hadn't been done, and we did a peer expo and invited teachers to attend. Hopefully, it opened up the door to possibilities and built some courage in others to be able to jump in."

The same teacher also gave insight into how taking a personalized approach to learning changed her perception of what is important.

> I don’t even want to say refine. It feels like an upheaval of what I knew and what is good for student learning. Yes, I mean from things like do we need to have grades in 6th grade, like does that help or hinder student learning, like big things like, do we just create a humanities section so that we can integrate so much more. Parents have asked, like is this really an English class? Because English skills are just integrated into humanities kinds of things. So, it's changed up so many things, and I see the value of the hearts of kids and who they are, versus a period and a comma.

Evaluation Phase Discussion

The purpose of this study was to understand how professional development through a CoP influenced teacher self-efficacy and perceptions of organizational learning. The intervention period was approximately four months in length, with twelve

participants, seven of whom completed the quantitative and qualitative data collection components. Individuals volunteered to take part in the intervention, which included two in-person meetings, three synchronous online sessions, individual planning sessions, document creation, implementation, and participation in a discussion board.

The triangulation of data gathered through multiple sources helped to inform the answers to the research questions:

- How does participation in a community of practice affect teacher self-efficacy to implement a new approach to teaching and learning?
- To what degree does participation in the CoP provide value for participants?
- How does teacher perception of organizational learning change after participating in the community of practice?

A discussion of the key results for each research question is presented in the subsequent sections.

Exploration of teacher self-efficacy. An analysis of quantitative data collected from the TSES survey indicates a modest growth in teacher self-efficacy in the student engagement and instructional strategies factor groupings. There was a trend down in the classroom management factor grouping of the TSES. An analysis of qualitative data collected from interviews, discussions, and the researcher's journal help to affirm and explain the trends. Additionally, activities and actions that participants felt help them to build efficacy to teach using a new approach were identified based on qualitative data.

Student engagement and instructional strategies. Personalized learning helps teachers use their knowledge of student interests to create a flexible learning environment and to increase intrinsic motivation (Bray & McClaskey, 2015). The student engagement

and instructional strategies factor grouping included questions about student motivation, the value of learning, assessing learning, meeting student needs, creativity, and critical thinking. These themes, while not specific to personalized learning, are essential elements for successful personalized instruction and, therefore, are highlighted in this data analysis.

Data collected from the TSES student engagement grouping revealed two responses that garnered the largest positive increase and positive effect size from pre- to post-assessment scores. The ability for teachers to help students value learning (d = .6) and foster student creativity (d = .48), both with a .86 gain in score. Qualitative data gathered through teacher interviews support the findings. Respondents felt the use of student voice and choice, backed by teacher coaching in both planning and enacting student projects, helped learners to "take their ideas and see where it leads them." By letting students generate their own ideas first, suggestions from teachers lead to “ideas that we wouldn’t have thought about if we didn’t have those conversations.” Teachers also reported that working alongside students to support them in reaching their end goal, allowed students to have ownership over their work and to value their effort. In an optional project sharing session after school, teachers observed that students were eager to share their work with family and friends. Over 80% of students showed up to the event, indicating that they felt their work was valuable enough to share with others.

In the instructional strategies group of the TSES, two response areas showed significance and notable effect size; teacher ability to craft good questions for students (p = .05; d = .69) and teacher ability to use a variety of assessment strategies (p =.05; d = 1.3). Assessment strategies also garnered the largest gain score with a value of 1.29.

Responses collected during the participant interviews reinforced the reactions from the TSES. As teachers incorporated a student-led form of instruction, the ability to craft questions to guide learning developed. Teachers made it a point to ask students questions instead of answering their questions (i.e., “I tried to get them to think about their question in another way, to ask guiding questions instead of giving answers.”).

The ability to craft and use good questions with students, supports assessment through both conversation and reflection. CoP participants used other forms of assessment in addition to questioning. New formats included single-point rubrics, regular 1:1 conferencing with students, student self-reflection prompts, and observation. One teacher reported, “I feel like I improved because I was being more intentional about having students do more self-reflection.” Another participant, "felt more justified" in using observation and conversations as evidence of learning after participating in professional development. Others noted that different formats, checklists with annotations and comments, and using data to adjust learning experiences for students as reasons they felt more confident in their ability to utilize various forms of assessment to understand student learning.

Teacher ability to adjust lessons to the proper level for individual students and to provide appropriate challenges for capable students both saw a 1-point increase in gain score from pre- to post-assessment. These points demonstrate the ability of teachers to meet student learning needs by using data to adjust instruction and to develop an in-depth knowledge of individual student interests, needs, and characteristics. Participants expressed the importance of using data to allow for "differentiation," a "focus on their

individual needs," and working with students to “figure out what was going to help them get to their goal.”

Classroom management. Results from the classroom management factor group showed an overall downward trend from pre- to post-assessment scores. Three questions showed a modest gain from pre- to post means but did not yield any significance, two questions showed no change from pre- to post-assessment scores, and three questions showed a decrease from pre- to post-assessment scores. The three areas that displayed a negative gain score were controlling disruptive behavior (-.71), establishing routines (-.43), and following classroom rules (-.43). Data from teacher interviews provides an explanation for the downtrend. Participants felt the difficulty in establishing new routines, and following classroom rules were inter-related. Issues transpired because they were not accustomed to the new process (i.e., "I didn't anticipate some of the routines I need to address ahead of time."). In one instance, an elementary school teacher noted, “Some of the students had a hard time thinking critically, and I realized they needed more structure.” A middle school teacher stated that as her students moved into a project with another teacher, the other teacher benefited because they had already gone through the process once with her. Students were more able to communicate their needs and attempted to problem solve on their own more often.

While disruptive behavior posted the largest decline (-.71), teachers felt that the disruption was due to everyone adjusting to a new process. Teachers stated that the new method was "chaos at times," as students needed the autonomy to work on issues on their own, leading to times where “off-task” behavior was perceived as an issue. One teacher stated, “it wasn’t disruptive behavior that was the issue, it was students off-task as I tried

to manage them in the midst of conferencing with individual students." Another shared that because students were moving at their own pace, there were those that needed additional support, "I had to guide some through the work, because if I wasn't there to help them, they easily became a distraction to others." The triangulation of quantitative and qualitative data suggests what Fullan (2001) described as an implementation dip being "a dip in performance and confidence as one encounters an innovation that requires new skills and new understandings" (p.40). As teachers implemented a new process in their classroom, they noticed that some of their old procedures were ineffective as things felt messy and "chaotic" at times. Yet, when reflecting on changes in their classrooms, teachers were able to identify the cause of the discord, allowing for future remediation.

Perceptions of self-efficacy from a CoP. Qualitative data gathered from interviews and document collection also support the recognition of improvement in self-efficacy by teachers. At the end of the intervention period, participants were asked to share perceptions of their own self-efficacy with what they accomplished in the CoP. Responses demonstrated participant confidence in implementing a new approach to learning in their classroom.

All participants in the CoP expressed appreciation for the ability to both try something new with their students and to have the support of the learning community during their implementation. Sentiments included the ability to "implement in a non-threatening way," and "in my own way," as well as gaining a better understanding of the personalized approach by "trying it out in my classroom, with my students." In both interviews and discussion posts, teachers acknowledged the benefits of being a part of a group that learned and experimented together, noting, "we are in the same position of

trying out new things." Hearing of both successes and struggles of other community members allowed teachers to both celebrate successes and use the group to as a forum to talk through ideas and ask for support when something wasn't quite working right. Teachers highlighted their appreciation for "hearing others' stories," "sharing thoughts and ideas," and "learning through the experiences of others."

When asked what element of the CoP directly impacted this feeling of greater self-efficacy, teachers recalled specific activities and interventions primarily focused on support and resources. Study participants said the resources provided by both the instructor and other classmates were beneficial to their learning. Resources that were referred to include websites, a class compiled list, and individualized “tool-kits” for teachers. Teachers preferred resources that included a variety of activities for a wide range of skills allowing them to select the most appropriate tool for their individual needs.

In terms of support, teachers emphasized that they found value in the conversations they had with other CoP members, the feedback from the instructor, and the time to develop relationships with those outside their usual work teams. The ability for teachers to associate specific activities, resources, and support modes with their efficacy in trying new techniques in their classrooms, indicates they benefited from the CoP. The evidence from the data collection suggests that participants made positive gains in self-efficacy through their participation in the CoP.

Value of the CoP. Wenger, Trayner, and De Laat’s (2011) conceptual framework for assessing the value of learning includes five graduating levels of value creation: immediate, potential, applied, realized, and reframing. Based on the data, I believe the

CoP achieved levels of immediate, potential, applied, and realized value for all participants. The reframing value cycle was likely met for two participants. To assess the value of the CoP for individual participants, qualitative data were used from document collection, interview questions, and the researcher's journal. Quantitative data was not collected for this section because time in the CoP was not devoted to teaching participants the value scale or how to interpret it. This made the collection of quantitative data impractical. I provided an interpretation of the qualitative data in the following section.

Achievement in the immediate and potential cycles. Results suggest all participants achieved the first two cycles of value creation, immediate and potential. The first two cycles include activities such as tip sharing, discussing successes and failures, helping a colleague problem solve, conducting a research project, and reflecting on means for improvement. Participants expressed the value of the resources and support available in their responses to both interview questions and discussion board prompts (i.e., "being able to bounce ideas off of like-minded teachers," "I appreciated the First 20 Days of Personalized Learning, being able to peek into each area."), as well as their use of various activities in the classroom to try to establish a personalized learning experience for their students. Teachers were asked to develop implementation plans and document student learning as they experimented in their classes. The plans detailed a variety of personalized learning applications such as student interest surveys, student to teacher conferencing, playlists, and individualized projects.

Potential value occurs when the knowledge shared in a community is not immediately realized. In this CoP, potential value was observed through the sharing of

resources and community building. During the final CoP session, teachers offered suggestions of how professional development might be adjusted to allow teachers to experience new styles of learning, as they would have their students experience (e.g., change staff meetings to be staff discussion; use the six thinking hats activity to provide personalization during workgroup sessions; and more experiential learning opportunities). This later realization of what could be, emerged after teachers experienced new styles of learning through the CoP.

Potential value was also evident in the final session as teachers shared their implementation projects and reflected on related events. Again, the researcher's journal provided an example of the community contributing to the body of knowledge. Two teachers independently shared their experiences with student-led conferences. They both discussed the logistical difficulty of the meetings but also the realization that it was a critical component to support the success of their students. The two were not aware of each other's interventions, and as a result of their sharing in the CoP, they planned to meet on their own to compare the process in more detail. Both teachers expressed their intentions to keep using student conferences in their classes and improve the process. In this example, the CoP allowed these two teachers to share their experiences with a common practice. During the CoP, they didn't share plans or strategy, they did their own research and implementation, so it was encouraging for them to see that they had similar results and support moving forward.

Achievement in the applied and realized cycles. The applied value cycle involves changes in practice, such as adapting knowledge to a new context or implementing an idea or innovation. In addition to activities and opinions shared in the discussion board

(e.g., single-point rubrics, encouraging student voice and choice, creating learner profiles), teachers recorded personalized projects in their implementation plans. Teachers tested various aspects of personalized learning from flexible learning spaces (3 teachers), personalized playlists (1 teacher), learner profiles (1 teacher), and individualized student projects (2 teachers). Each implementation plan (Appendix E) serves as evidence for the applied value cycle.

The realized cycle encourages performance improvement based on the reflection of changes occurring in the applied cycle. As a part of the final sharing session, teachers were asked to identify areas of success (i.e., “variety of choice," “meaningful feedback," “involved parents”) and improvement (i.e., “more time to practice," “provide better instructions to students," "more structure") and ideas for continuing the use of personalized learning beyond the CoP. Discussion board prompts asked participants to try smaller activities in their courses along with their larger implementation project, as their curriculum allowed. Those activities included goal setting, co-creating rubrics with students, student self-assessment, and identifying learning needs. One respondent discussed her use of goal setting with students and identified the need to start her next school year with consistent, short term goal setting tasks, modeling, providing exemplars, and organizing playlists for students, as an example of her achievement of the realized value cycle.

Achievement of the reframing cycle. The reframing value cycle is achieved when the learning forces the redefinition of success criteria. For two teachers at the same division, participation in the CoP informed decisions beyond the scope of their classrooms. Gathered from interviews, the qualitative data presented in this section

support the move towards the creation of a new framework based on redefined measures of success. One teacher used her experience and knowledge of personalized learning to inform a decision about the continued grouping of students according to ability. She successfully convinced her team to move away from labeling students and to work towards multi-level classrooms that meet all learners' needs through a personalized approach. The second teacher also spoke of the move to a humanities focus at her grade level and was excited to share that she already had conversations with the social studies teacher about the integration of personalized learning and passion-based projects. They agreed to run a combined humanities course for their English and social studies students for the 2019-2020 school year. The same teacher also gave insight into how taking a personalized approach to learning changed her perception of what is important.

> I don't even want to say refine. It feels like an upheaval of what I knew and what is good for student learning. Yes, I mean from things like do we need to have grades in 6th grade, like does that help or hinder student learning, like big things like, do we just create a humanities section so that we can integrate so much more…So, it's changed up so many things, and I see the value of the hearts of kids and who they are, versus a period and a comma.

While this study was not long enough to study the effects that teachers in the reframing cycle achieved, both teachers changed an understood practice and implemented new strategies beyond the scope of their individual classrooms. A follow-up interview would be ideal for learning of the impact these changes are making at their division. Based on the results provided, participants accomplished varying levels of value through their participation in the CoP.

Perception of organizational learning. The third research question for this study was centered around organizational learning; *How does teacher perception of organizational learning change after participating in the community of practice*? Data

were gathered via the Organizational Learning Survey and administered both pre- and post-intervention for comparison. The primary reason for collecting data on organizational learning was the desire for leaders at the school to engage in meaningful change through the development of a culture of learning. Purposeful interaction is an essential component for continuous improvement, and the degree to which change occurs is strongly related to teacher interaction with each other (Fullan, 2001). Thus, it was my desire to see if the CoP could strengthen the perception of organizational learning in the school.

While qualitative data collected from the interviews and documents did show that participation in the CoP fostered the feeling of a learning community, the quantitative data collected from all three groupings of the Organizational Learning Survey posted a decline from pre- to post-intervention. The negative change was true for ten of twelve statements in the survey. Two statements reflected no change from pre- to post-assessment scores. Data from four statements in the leadership category indicated a significant, negative change: *my principal invites input from others in discussions* (p = .02), *my principal asks probing questions* (p = .07), *my principal listens attentively* (p = .04), and *my principal encourages multiple points of view* (p = .02).

Qualitative data gathered during online synchronous discussions via the research's journal provided insights regarding the negative changes. Midway through the study period, teachers were asked to share their progress and note any issues or concerns they noticed. The group had consensus around the idea that if some teachers are engaging in transformative learning, leaders should provide more opportunities for both those teachers to practice and new teachers to enlist. One idea shared was a desire for more

professional development experiences that allow teachers to experience new styles of learning as they would like their students to experience and offered suggestions for change (e.g., discussion and active involvement during staff meetings instead of just "information feeding"). Another proposal was for supervisors to be more engaged with the professional development that their teachers participate in, so they could better understand “what I am actually doing in my classroom, and what I need support with.”

These comments imply that at the start of the study, teachers may have felt the school was innovative for creating a new vision and providing professional development. However, as teachers learned new pedagogy, they realized the inadequacy of the current structure to support the change. This observation correlates with the results of an informal survey discussed in the diagnosing phase (i.e., 76% of the teachers expressed disbelief that the school can achieve the new organizational goals using the existing school structure).

Recommendations

Based on the integration and evaluation of quantitative and qualitative data, three recommendations apply to both the Evaluation and Monitoring Phases of this MMAR study. The suggestions support the continued use of both MMAR and CoPs at the study site. The recommendations are described below.

Integrate Teacher Leaders

While teachers experienced value from participating in the CoP to different degrees, qualitative results showed evidence that all teachers in the CoP found at least some value in participating. Hence, the first recommendation is to issue a follow-up survey to see if teachers are still implementing personalized learning, and if so, what

adjustments have they made, and where might they need support. Gathering this data could continue to add to the CoP's body of knowledge. Ka Pilina should use the data to offer a second PD opportunity that allows new teachers to enter the CoP while continuing to engage participants from the first cohort to share and support new members. Because they have a base level of experience with personalized learning, this creates the potential for teacher leaders/mentors.

Administrative Participants

The second recommendation is to invite administrators to be more actively involved in the CoP. Results revealed that participants felt disconnected from their principals, noting the environment in the school did not naturally foster experimentation, psychological safety, and leadership that reinforces learning. One shared sentiment, in particular, revealed that teachers felt not enough was understood at the administrative level of what it takes to implement personalized learning in the classroom. Moving forward, administrators will be invited to regular sharing sessions hosted by the CoP so that they can gain a better understanding of successes and challenges during implementation and discuss ideas on how they can best support teachers.

Focusing on Leadership for Change

The final recommendation is to include more training and support for leaders as they guide teachers through the pedagogical change. If changes are to be successfully implemented at the study site, leaders must have a strong foundational understanding of support systems for personalized learning. Leaders can benefit from training in personalized learning to gain this understanding.

To best be able to support a system-wide shift to personalized learning, leaders will need a strong-base of support from teacher leaders. Supervisors must be able to develop leadership capacity in their teachers. Data suggests that teachers can benefit from more empowerment bestowed from leaders (e.g., inviting input, listen attentively, encourages multiple points of view). Thus, the recommendation is that once leaders have a sufficient understanding of a system to support personalized learning, they should engage teachers from this study in an advisory role. Empowering teachers by working alongside their administrators to develop a plan for school-wide implementation will ensure stronger stakeholder support and increase the likelihood that the implementation will be successful.

Implications, Reflections, and Lessons Learned

The findings of this MMAR study suggest the benefits of using CoPs for professional development. The qualitative results, in particular, support the strengthened perceptions of value and self-efficacy of study participants. The quantitative data implies the need for greater consideration of leadership involvement and change management.

Implications

The bulk of this study focused on the creation, implementation, and evaluation of a CoP to measure teacher self-efficacy and degree of value attained, the results of which present positive findings. These findings suggest that CoPs can serve as a professional development method for strengthening teacher self-efficacy. Self-efficacy is an important capacity to develop as it relates to people's motivation, behavior, and their ultimate success or failure in a given situation (Bandura, 1997). The study site should consider the

prudent use of CoPs as a means for supporting teachers when using a new approach to teaching and learning to increase teacher self-efficacy.

Perhaps the more significant implications of the study are in the area of organizational learning, more specifically, leading change to enable the organization to learn. Fullan, Cuttress, and Kilcher (2005) encourage leaders of change to foster success in others through building leadership capacity and enhanced decision-making capabilities. When leaders include staff in a collaborative process and provide the opportunity to participate in the decision-making process, teachers are not only empowered, they enhance performance in their schools (Leithwood & Riehl, 2003). The review of results identified a need for more communication from and collaboration with supervisors. In particular, teachers felt that their principals did not fully understand what was needed to implement personalized learning and, therefore, were not able to help create the structures (e.g., schedule, release time) to support sustained implementation. Additionally, teachers expressed that they did not often feel empowered by their principals. The results indicate that supervisors need to make a more concerted effort to work with teachers as they explore unfamiliar pedagogical approaches to determine support structures to ensure the sustained implementation of the new pedagogy. A collaborative effort between teacher-participants and their immediate supervisors can foster organizational learning.

Reflections and Lessons Learned

According to Sagor (2011), action research is a "process of inquiry conducted by and for those taking the action (p. 1)." At the culmination of this study, I now realize the import place action research has in a school setting. The lessons learned from this

MMAR project involved conducting action research, the value of learning communities, and leading and communicating change. A reflection of lessons learned is provided in the following section.

Action research. This study was designed using an MMAR approach and therefore required the use of both quantitative and qualitative data. In selecting a quantitative method to assess teachers' self-efficacy in the evaluation phase, I opted to use the TSES, a general measure of teacher self-efficacy. While the survey results gave some insight into perceptions of teachers that I was then able to triangulate with qualitative data, the data collection could have been enhanced by a quantitative method developed specifically for personalized learning. In consideration of future studies such as the second level iteration discussed in the recommendation section, I would develop a questionnaire to specifically assess teacher self-efficacy to use a personalized approach to teaching and learning. This would allow me to call out and address various elements of personalized learning such as student voice, mastery, agency, and flexible learning environments. It would allow participants to self-assess their degree of comfort using personalized learning and provide an opportunity for additional qualitative data to be collected that are in direct support of each element called out in the questionnaire.

I appreciated that the design of action research is such that it allows for close interaction with participants. I enjoyed working with and learning from classroom teachers, and I truly appreciated their insights into the trials and joys of teaching with a personalized approach to learning. While I typically work with teachers at the high school, of the seven that completed the study, only one was a high school faculty

member, affording me the opportunity to work with others that I hadn't worked closely with before.

Although it was a busy school year, the seven participants that completed the study provided substantial data to help the study site move forward with a more concerted effort for implementation. Of the seven that completed the study, five opted to earn professional development credits, and this could be a reason why they persisted until the end. However, I was encouraged by the fact that the other two participated through the entire course of study, just for their own personal attainment. The action research process required time and flexibility, but I believe it is a definite benefit for teacher growth and improvement.

Value of learning communities. Although there were challenges of time and commitment from study participants, I learned that building purposeful learning communities as a means to support professional development is a worthwhile endeavor. Qualitative data supported the degree to which participants found value in the CoP, and the experience allowed for dialog across divisions. Due to scheduling differences, teachers don't often have the opportunity to share with those at other divisions. For one set of participants, their discussions continued outside of their CoP projects, and they met to articulate an assessment plan for project-based learning at 4th, 7th, and 11th grade. This information was not a part of the study, but it serves as an example of how participation in the CoP allowed for development in other curriculum-related areas. There is still more work to be done by this group, but they have created their own small community for support.

Anecdotally, one teacher felt that through her implementation of a passion project, each of her classes developed into their own communities of learners. She noted that while they struggled at times, herself included, they had built enough of a support network that they were able to help each other through the trials and to celebrate successes. In that regard, perhaps a future area of study is the impact that teacher participation in a CoP has on student self-efficacy.

Leading and communicating change. Upon review of the data, a realization was the need for supervising principals to be more involved in the process. The design of the CoP was such that enrollment was open and optional. No administrators opted to participate, which I feel in some ways was beneficial as it allowed for more open discussion and dialog amongst the teachers. However, without planned interaction between teachers and principals, the teacher-participants did not feel that their supervisors had an adequate enough understanding of their work. There was little in the way of communication between the two parties, and I believe that teachers could have felt more supported if principals had been encouraged to communicate messages to alleviate some of their fears (e.g., failure is okay when trying something new, your experiment is valued, I will find a way to support your needs). In retrospect, it would have helped to invite the principals into the CoP during work-sharing sessions, so they could see progress and get an understating of the shifts occurring in the classrooms. I also realize that there was a missed opportunity to offer principals the opportunity to participate in their own CoP that worked in tandem with the teacher CoP but focused more on change management, policy, and structure for supporting personalized learning. I think this is where more in the way of change management and leading organizational

change for learning could have been infused and should be considered by the study site for future professional development programs.

Conclusion

The purpose of this MMAR study was to examine the use of a CoP in supporting teachers as they transition to personalized approaches to teaching. The aim of the study was to determine how participation in a CoP affects teacher self-efficacy to use a new approach to learning and their perception of organizational learning. An analysis of qualitative and quantitative data indicated positive changes in the areas of self-efficacy to teach using a new approach as well as in teacher perception of the value attained through participation. Results from the data collected from teachers on their perception of organizational learning, however, did not yield any positive gains.

Studies by Beauchamp et al. (2014) and Duncan-Howell (2010) show that the most valuable professional learning experiences for teacher involve collaboration with colleagues. While the results of this study are not generalizable on a large scale, the data gathered through this study supports the work of Beauchamp et al. and Duncan-Howell in that the collaborative nature of CoPs for professional development provide value and increase participant self-efficacy. As such, CoPs should continue as a means for a teacher driven, collaborative knowledge building professional development. In the case of this particular study site, the addition of a concurrent CoP for leaders that allows for regular interaction with the teacher CoP is a suggestion for future study, as a way promote a collaborative effort between teacher-participants and their immediate supervisors to foster organizational learning.

Appendix A

Reconnaissance Phase: Professional Development Needs Questionnaire

Professional Development

What motivates you to participate in professional development offerings? Select all that apply.

- The opportunity to develop solutions to work challenges
- Working with other teachers to benefit student learning
- Personal growth/interest
- Ability to earn incentives or rewards (credits, degree, extra planning time, etc)
- The ability to dialog with my coworkers to find out what is working for them or what is not
- Expanding my personal network
- Relevancy to my classroom practice
- Opportunities to share knowledge/resources
- Career development
- Time off to participate in the PD during work hours
- Future job opportunities
- Other _____
  _____

What limits your ability to participate in professional development offerings? Select all that apply

- I have other personal activities scheduled
- I have other professional activities scheduled
- The offering is too long of a commitment
- Lack of support from administration (e.g. funding, approval, time, etc.)
- Lack of incentives (e.g. PD credit, paid leave, stipend, etc.)
- I have too many other job related tasks to complete that will not allow me enough additional time to do PD. "I have too many things on my work plate"
- I do not have child care
- The length of time of the PD opportunity is too long
- The length of time of the PD opportunity is too short
- The PD session is not leveled appropriately for me (e.g. too advanced or too easy)
- Other _____
  _____

Which of the following days/times work for you with PD? Select all that apply.

☐ Mon ☐ Tues ☐ Wed ☐ Thurs ☐ Fri ☐ Sat

☐ Fall Break ☐ Winter Break ☐ Spring Break ☐ Summer Break

☐ Before School ☐ After School ☐ Prep Time ☐ Lunch Break ☐ 1 hr After Dinner

Is there a specific time(s)/dates(s)/seasons you don't want to do professional development?

_____
_____

Describe your ideal PD session, or describe an especially successful experience.

_____
_____
_____
_____
_____
_____

Select the PD models you would be willing to participate in. Check all that apply.

- ☐ Workshop (one day/one topic)
- ☐ Institute (multiple days/one topic)
- ☐ Conference (one day/many topics)
- ☐ School visits
- ☐ Work groups/teacher teams
- ☐ Mentoring/coaching
- ☐ Action research
- ☐ Learning communities
- ☐ Online courses
- ☐ Blended course
- ☐ B-credit classes
- ☐ Internship
- ☐ Video/book study
- ☐ Project teams
- ☐ Other _____

Personalized Learning

Our school has defined personalized learning as, "the design of diverse learning experiences based on the learners' strengths, needs, and interests that nurture Learners' voice, choice, and agency." They further state that haumāna learn best when they feel valued and empowered.

What do you need to happen in order to feel confident in your ability to use a personalized approach to learning in your classroom? What other support (personnel, resources) might you need?

_____
_____
_____
_____

What is one thing that you could do to further the use of personalized learning in your classroom?

_____
_____

What is one thing you could do to further the use of personalized learning in our school?

_____
_____

Communities of Practice (CoP)

Which of the following CoP components/activities would you like to see in a professional development program designed to help implement PL approaches? Select all that apply.

- Shared goal
- Build a sense of community with other teachers participating
- Develop a common sense of purpose/vision
- Use action research
- Share work-related knowledge with other teachers
- Share resources with other teachers
- Work as a team to plan projects, events, solutions
- Build up a set of communal resources on PL
- Open communication
- Informal meetings/settings
- Formal meetings/settings
- Have a share space to store resources (online)
- Partner with other teachers/community members to achieve better results
- The ability to bring people in from the outside for additional support when needed
- Have a say in when the PD team meets
- Relevancy to your specific work setting
- Recognition for achievement/contributions
- Flexibility to choose/modify content
- Good online platform for communicating when not able to meet face-to-face
- Other _____
  _____
  _____
  _____

Appendix B

Reconnaissance & Evaluation Phases: Pre- & Post Assessment Survey Instruments

Teachers' Sense of Efficacy Scale

Participant ID Code: _____ Date: _____

Teacher Beliefs - TSES

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your *current* ability, resources, and opportunity to do each of the following in your present position.

	None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. How much can you do to help your students think critically?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. How much can you do to control disruptive behavior in the classroom?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
4. How much can you do to motivate students who show low interest in school work?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
5. To what extent can you make your expectations clear about student behavior?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
6. How much can you do to get students to believe they can do well in school work?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
7. How well can you respond to difficult questions from your students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
8. How well can you establish routines to keep activities running smoothly?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
9. How much can you do to help your students value learning?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
10. How much can you gauge student comprehension of what you have taught?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
11. To what extent can you craft good questions for your students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
12. How much can you do to foster student creativity?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
13. How much can you do to get children to follow classroom rules?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
14. How much can you do to improve the understanding of a student who is failing?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
15. How much can you do to calm a student who is disruptive or noisy?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
16. How well can you establish a classroom management system with each group of students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
17. How much can you do to adjust your lessons to the proper level for individual students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
18. How much can you use a variety of assessment strategies?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
19. How well can you keep a few problem students form ruining an entire lesson?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
20. To what extent can you provide an alternative explanation or example when students are confused?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
21. How well can you respond to defiant students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
22. How much can you assist families in helping their children do well in school?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
23. How well can you implement alternative strategies in your classroom?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
24. How well can you provide appropriate challenges for very capable students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨

Reconnaissance & Evaluation Phases: Pre- & Post Assessment Survey Instruments

Culture of Learning within the School

Participant ID Code: _____ Date: _____

Indicate the degree to which you agree with the following statements by placing an x in the appropriate box.

	Strongly Agree - 7	6	5	Neutral 4	3	2	Strongly Disagree 1
Psychological Safety							
In this school, it is easy to speak up about what is on your mind.							
People in this school are usually comfortable talking about problems and disagreements.							
People in this school are eager to share information about what does and doesn't work.							
Experimentation							
This school experiments frequently with new ways of working.							
This school experiments frequently with new instructional practices or strategies.							
This school has a formal process for conducting and evaluating experiments or new ideas.							
Leadership That Reinforces Learning							
My principal invites input from other in discussions.							
My principal acknowledges his or her own limitations with respect to knowledge, information, or expertise.							
My principal asks probing questions.							
My principal listens attentively.							
My principal encourages multiple points of view.							
My principal criticizes views different from his or her own. (reverse coded)							

Higgins, M., Ishimaru, A., Holcombe, R., Fowler, A. (2012). Examining organizational learning in schools: The role of psychological safety, experimentation, and leadership that reinforces learning. *Journal of Educational Change, 13(1),* 67-94.

Appendix C

Consent to use TSES

William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

October 7, 2018

Kelly,

You have my permission to use the Teacher Sense of Efficacy Scale (formerly called the Ohio State Teacher Sense of Efficacy Scale), which I developed with Anita Woolfolk Hoy, in your research. You can find a copy of the measure and scoring directions on my web site at http://wmpeople.wm.edu/site/page/mxtsch . Please use the following as the proper citation:

> Tschannen-Moran, M & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for this measure as well as other articles I have written on this and related topics.

I would love to receive a brief summary of your results.

All the best,

Megan Tschannen-Moran
The College of William and Mary
School of Education

P.O. Box 8795 • Williamsburg, VA 23187-8795 • (757) 221-2187 • mxtsch@wm.edu

Appendix D

Reconnaissance Phase: Cognitive Testing Results – Questionnaire

Original Question	Revised
What motivates you to participate in professional development offerings? Select all that apply.	Keep current options, but add the following as response options: • Future job opportunities
What limits your ability to participate in professional development offerings? Select all that apply	Separate response option number 1; • I have other personal activities scheduled • I have other professional activities scheduled add additional response options: • I do not have child care • The length of time of the PD session is too long • The length of time of the PD session is too short • The PD session is not leveled appropriately for me
Which of the following days/times work for you with PD? Select all that apply.	No changes recommended
Describe your ideal PD session.	Add text: • or describe an especially successful experience.
Select the PD models you would be willing to participate in. Check all that apply.	No changes recommended
What do you need to happen in order to feel confident in your ability to use a personalized approach to learning in your classroom? What other support (personnel, resources) might you need?	Add definition of personalized learning to section header for more clarity. The following definition will be used: "the design of diverse learning experiences based on the learners' strengths, needs, and interests that nurture learners' voice, choice, and agency." They further state that haumāna (students) learn best when they feel valued and empowered.
What kinds of suggestions do you have for us to become a school that is uses personalized learning as a whole school approach?	Clarify & separate question into two parts: • What is one thing you could do to further the use of personalized learning your class? • What is one thing you could do to further the use of personalized learning in your school?
Which of the following Community of Practice components/activities would you like to see in a professional development program designed to help implement PL Approaches? Select all that apply.	Add 1 more response option: • Other
Do you have any other suggestions for components or activities to be included in a CoP for PD?	Recommend removal – with addition of response option in previous question, this question is redundant.

Appendix E

Intervention Artifacts

Stage 1: Potential

Guiding questions for group activity:

- What are the skills/attributes that we want our students to have?
- What are the qualities you want to see in your learners?

Reprint of group responses:

Common Beliefs

Group 1	Group 2	Group 3	Group 4
• Grit • Perseverance • Willingness to take a risk • Creativity • Growth mindset • Critical thinking • Creativity	• Enthusiasm for learning • Independent learners • Empowered learners • Perseverance, grit, self-efficacy • Moving through challenges • Improved academic "hangtime" – attentive for a long period of time • Resourceful • Teamwork • Collaboration • Inquisitive, inquiry, ask good questions • Try new things • Fail forward • Mistakes = opportunities • Resilience • Get the job done • Reflective learners • Transfer learning to other situations • metacognition	• Culture-based experiences • Collaborative • Creative • Grit • Fail Forward	• Love of learning • Inquiry-based • Culture is important • Reflection/self-reflective • Collaborative • Kind

Stage 2: Coalescing

Sample Action Plan

Personal Learning Action Plan

Title: Research Writing Playlist

Goal Setting
Highlight the statement that best reflects your present knowledge and understanding of the subject. ❑ I am new to this subject ❑ I know a little about this subject ❑ I know about this subject but want to know more ❑ I know a lot about this subject
Learning Goal: Create a playlist of resources for my Research Writing unit. The resource will be designed for grade 7 ELA students who are being *introduced* to the MLA formatting & citation process. It will be designed to support students before & during the writing process of a research report. Students will use the resources in the playlist to: -learn concepts or processes -review concepts or processes -self-assess writing -peer-assess writing -practice skills -demonstrate skills -conference -edit writing -analyze research writing of others All students will complete the steps in the playlist in sequential order. They may review and re-do steps as often as they choose before moving on to the next step. They may revisit previous steps as necessary. The playlist can be customized to address extra needs of specific learners who might need more scaffolding and support. Students will complete the steps for homework and during each class period. The playlist will be created in Google Slides, then shared in Google Classroom.

Personal Learning Action Plan

Action Steps *Remember to capture your progress along the way, through reflections & photos.*	**Date Due**
Create a Google Slide ~~Hyperdoc Google Spreadsheet~~ for Research Writing Playlist	March 29, 2019
Include resources to access information in the Google Slides	April 3, 2019
Include resources to engage with information in the Google Slides	April 5, 2019
Include resources to express learning in the Google Slides	April 8, 2019
Include conference/check-in points in the Google Slides	April 10, 2019
Include rubrics in the Google Slides	April 12, 2019
Share the playlist on Google Classroom with ELA students	April 15, 2019

Evidence of Reaching Your Goal
How will you know when you're successful? The playlist will include a combination of the following: *Resources to Access information *Resources to Engage with information *Resources to Express learning *Videos, Screencasts, Tutorials *Audio files *Assessment materials/activities *Interactive components *Conferencing Check-Points *Self-Assessment opportunities *Peer-Assessment opportunities *Rubrics *Practice opportunities

Support
I will need the following support for my goal:

Personal Learning Action Plan

Set of apps/tools that could support my goal:

More resources on Hyperdocs -
https://usingtechnologybetter.com/how-to-create-a-hyperdoc-to-encourage-independent-learning-in-your-classroom/

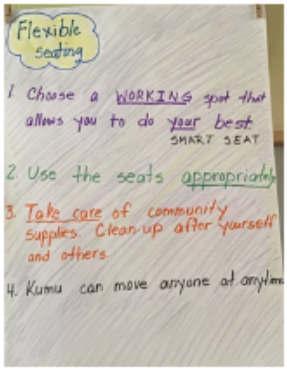
Implementation Alignment
Alignment to E Ola: Self-Efficacy Growth Mindset Academic Competence: Transfer Goal A ELA middle school
Alignment to content standards: CCSS.ELA-LITERACY.W.7.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. CCSS.ELA-LITERACY.W.7.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. CCSS.ELA-LITERACY.W.7.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation. CCSS.ELA-LITERACY.W.7.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

Stage 3: Maturing

Portfolio Excerpt

* Note – Names and photographs of students/faculty have been removed.

Flexible Seating



E Olal Learner Outcomes:

- Kūpono – Take responsibility for one's actions
- Mālama & Kuleana
- Collaboration
- Growth mindset

The best evidence which showcases the success of flexible seating is that students were (mostly) able to be productive even when they were able to choose their "smart seat".

For most of the school year, students had a "home seat" that they began the day at. They were also responsible for putting up the chair at that spot. Since students had no mailbox, so when papers were passed out, it was helpful to know where each student's home seat was.

Fast forward to me being introduced to "The Frist 20 Days of Personalized Learning" and learning about flexible seating. An anchor chart was developed and reviewed with the students. I then held students more accountable for taking care of classroom supplies and choosing better smart seats. When students needed help making that choice, I used the term "smart seat" when I moved them. They were able to tell me why they were being moved.

In May, students chose where they wanted to sit from the very beginning of the day. The majoirty of students said they were ready to for this. Oddly enought, not all students wanted this; They could retain a home seat. I still reserved the right to move students on an as-needed-basis.

Lunch was a different story. I think because it's more of a social event, students had a harder time with this. They were told to go back to their

Reflection

I ALMOST wish I had started to learn about PL earlier so I could have tried more things. However, this happened at the right time because I was more prepared to take more risks.

I wonder how much better the projects would have been if I had spent more time to really develop rubrics with my students. I found an editable rubric and used that, but it's not the same as developing one with the students AND having expemplars.

I liked that students were so excited to research this topic and to share their findings. When they realized they had a real audience to present their research to, they took this assignment seriously.

Next Steps:

- Start earlier to allow more time
- Develop rubrics with students (possibly 1 pt rubrics)
- Allow for self-reflection
- Give feedback
- Be intention & transparent about the learning target.

Appendix F

Intervention Scope & Sequence

Module	Discussion Prompts	Activities
Introduction 2/3/19 - 2/10/19	- What is your why? (S. Sinek Video) - What are you hoping to learn about PL in this course? - What are the skills/attributes that we want our students to have? - What are the qualities you want to see in your learners?	- Synchronous meeting - Shared beliefs activity - Pre-assessment surveys - Small group sharing activity - Intro to PL resources - Portfolio resources
Module 1 2/11/19 - 2/24/19	- Reflective prompts: - What do you know about PL? - What would you like to learn more about PL? - What concerns or fears might you have thus far, about PL? - What actions are you taking today to help you reach your future goals?	- Honeycomb alignment exercise - Extended learning – PL book* - Examples in schools* - Who I am as a learner* - I like, I wish, I wonder
Module 2 2/25/19 - 3/10/19	Reflective prompts for activities: - Was this activity successful? - What can I do to help you learn more?	- Synchronous meeting - Develop learning plan based on goals. - UDL basics - Class profile* - Contribute to class toolbox - *The First 20 Days* resources list - *Myth of Average**
Module 3 3/11/10 - 3/24/19	- As of this point in time, what else might you need to keep you moving towards the completion of your learning goals? - What's going on with PL in your class? What have you tried, what questions do you have?	- Synchronous meeting - Personalized resources playlist - Reflection - Learning plan update
Module 4 3/25/19 – 4/14/19	- What are some questions you still have about competency-based learning or going gradeless? - In what ways do you think you might be able to start using some of the strategies for competency-based ed and/or going gradeless? Assessment Prompts - Share about something you tried. - Add another resource.	- Synchronous meeting - Competency-based learning - Assessment as learning - Continued work on learning (implementation) plan

	- Critique one of the resources provided.	
Module 5 4/15/19 – 4/29/19	- What are some things from the CoP that you'd like to continue or see in other PD sessions? This can be content and/or process related. - What are some things from this CoP you feel could be dropped or left out? - What would you like to try or build on with your students that you didn't have time to do during this course? - Do you feel that participating in the CoP increased your self-efficacy to implement PL in your classroom? Please explain.	- Synchronous meeting - Work on portfolio that includes details on classroom implementation
Share & Close 4/30/19 – 5/10/2019	- Do you still feel that PL is beneficial? - Is it something that we should work towards as a school? If yes, what are some considerations moving forward? - What are some obstacles to implementing PL, what can you do to overcome them? - What do others need to understand about PL? - What support do you need? - Where should we go from here?	- Synchronous Meeting - Post-assessment Surveys - Participant interviews - Submit learning portfolio

* denotes optional activities

Appendix G

Evaluation Phase: Interview Protocol

Purpose Statement: The purpose of this semi-structured interview is to gather in-depth data on survey responses in regards to the use of personalized learning strategies shared in the CoP as well as to ascertain the perceived value of participating in the CoP. The researcher developed the set of questions focused on personalized learning strategies as sub-questions to answer research question 1. The second set of questions was developed to understand the degree to which participants find value in participating in the CoP, as outlined in the Value Creation Framework by Wenger-Trayner, Wenger-Trayner, and deLatt (2011). The final question is to see how much of the impact if any, came from this professional development activity and not another one in which a teacher may have simultaneously participated.

Date: The date will be scheduled once the researcher receives IRB approval.

Time: The time will be determined based on participant availability and schedule. Each interview should last between 20-30 minutes.

Location: The interview will take place in a location on campus that is selected by the interviewee. They may opt from the use of their classroom, a private office space, or a teacher lounge.

Participants: Limited to those parties that have willingly agreed to join the CoP and have willingly volunteered to be a part of the study. Participants may opt to skip questions or end the interview at any point in time if they so choose.

Confidentiality: To protect the confidentiality of all participants, participants will be assigned individual identification codes by the researcher to be used during the data collection and analysis phases. The researcher will comply with the guidelines

established by the International Review Board and data will be stored and destroyed accordingly.

Interview Instructions: Before the start of the study, all willing participants will sign a confidentiality waiver and consent to participate form. The interviewer will read the following statement of instructions to interviewees.

Interview Instruction Statement: Thank you for taking the time today to participate in this interview. Before we get started, I wanted to share the procedures with you. I have seven questions to ask, and I will follow up with sub-questions for several of them. If at any time, you need clarification on a question or would prefer not to answer a question, please stop, and let me know. You may skip questions if you so choose. I will record the interview for transcription purposes only and will destroy the audio copy once the study is complete. I would also like to share the transcription with you so that you can ensure that what I have recorded accurately reflects your thoughts. Are you ready to get started?

Questions:

Efficacy to Teach Using Personalized Learning

In your post-assessment survey, you responded to a list of personalized learning practices in your classroom (provide a list of selections to the interviewee for review)

1. The following question items show an increase from the pre-assessment to the post-assessment (show participants their responses).
    a. Can you share some examples or reasons why you feel more confident in your ability to implement the personalized learning strategy with your students, in the highlighted areas listed on the survey?
    b. What components or activities within the CoP, if any, helped to develop your confidence in the approach?
2. The following practices show a decrease or status quo from the pre-assessment to the post-assessment (show participants their responses).
    a. Can you reflect on why this is?
    b. What support (resources, time, people, etc.) might you need to consider implementing these components in the future?
3. Which discussions, activities, sharing sessions did you find most beneficial during your time participating in the CoP?

The Value of Communities of Practice

1. What was your experience participating in the CoP? (Immediate)
2. How have you benefited from participating in the CoP? (Potential)
    a. In terms of knowledge/skills; change in perspective; Confidence in ability to practice concepts; inspired by my work; provided new opportunities for learning?
    b. In terms of social relationships with new people; stronger connections; more trust?
    c. In terms of access to resources?
3. What difference has participating in the CoP had on your classroom practice? (Applied)
    a. Where/when have you applied a skill learned?
    b. When have you used community connections to benefit a task?
4. What difference has it made in your ability to achieve what matters to you in your teaching? (Realized)
    a. What effect did the implementation of my new skills have on students in my classroom?
    b. Has my participation in the CoP benefited those in the organization that are not in the CoP? (e.g., have you taught a skill to a coworker)
5. Has participation in the CoP changed my perception of what matters? (Reframing)

Professional Development

1. Did you participate in any other professional development activities outside of this CoP, in the past four months (during the duration of the CoP)?
    a. If yes, can you describe the purpose of the activity, as well as what you gained from the experience?
    b. If yes, did you use some of what you learned in the other PD in conjunction with what you learned in this CoP? Provide any pertinent details.

After the Interview: Thank you so much for your time, not just during this interview but for your participation in the study. I will transcribe the interview and send a copy of the transcription to you for your review. At that time, please let me know if there are any discrepancies. Once again, I appreciate your participation and your feedback. If there is anything I can do to further support you use of personalized approaches in your class, please do not hesitate to ask.

Appendix H

Consent to Participate in a Research Study

KEY INFORMATION FOR: A PERSONALIZED APPROACH TO PROFESSIONAL DEVELOPMENT THROUGH A COMMUNITY OF PRACTICE

You are being invited to take part in a research study about how the use of a community of practice can enhance the professional development experience for teachers learning to use a personalized approach to teaching.

WHAT IS THE PURPOSE, PROCEDURES, AND DURATION OF THIS STUDY?

By doing this study, we hope to learn the how a community of practice might be implemented to address the professional development needs of teachers as they implement personalized-learning approaches in the classroom. Subjects will be asked to participate in a community of practice through discussions, reflections, resource sharing, and the development of a classroom implementation action plan. The researcher will gather your input on your opinions about professional development, your confidence with implementing personalized learning in the classroom, your perceived value of participating in the community of practice, and your perception of organizational learning. The study duration is expected to last for 3.5 months.

WHAT ARE REASONS YOU MIGHT CHOOSE TO VOLUNTEER FOR THIS STUDY?

The main benefit for participating in the study is the access to resources, strategy, and feedback on the use of personalized learning strategies in the classroom. An additional benefit is the support that a community of practice offers as you learn alongside and collaborate with your colleagues.

WHAT ARE REASONS YOU MIGHT CHOOSE NOT TO VOLUNTEER FOR THIS STUDY?

There are minimal risks associated with participating in this study. Participants may experience a loss of time as they participate in the professional development portion of the study, as well as during interviews or survey completion.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any services, benefits, or rights you would normally have if you choose not to volunteer.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS OR CONCERNS?

The person in charge of this study is Kelly Cua of the University of Kentucky, Department of Educational Leadership Studies. If you have questions, suggestions, or concerns regarding this study or you want to withdraw from the study her contact information is: kelcua@gmail.com.

If you have any questions, suggestions or concerns about your rights as a volunteer in this research, contact staff in the University of Kentucky (UK) Office of Research Integrity (ORI) between the business hours of 8am and 5pm EST, Monday-Friday at 859-257-9428 or toll free at 1-866-400-9428.

Detailed Consent:

ARE THERE REASONS WHY YOU WOULD NOT QUALIFY FOR THIS STUDY?

There is no reason why a participant should not take part in the study.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at a participant select location at their respective campus site. Sessions may also be conducted live, online through WebEx, or asynchronously via GSuite and Google Classroom. Face-to-face and synchronous, online meeting times and amounts will vary based on participant needs and feedback, however, you will not be asked to meet more than 10 times by the researcher. Each of those visits will take about 30 – 90 minutes. Time commitments for each participant may vary based on their individual support needs, however, the total amount of time you will be asked to volunteer for in this study is 16 hours over the next 3.5 months. The total participation time for the study includes your participation in meetings, discussion board posts, a questionnaire, a pre/post survey, one interview, as well as your time developing your implementation plan.

WHAT WILL YOU BE ASKED TO DO?

As a part of this study you will be asked to participate in a minimum of 6 meetings that will be scheduled by the researcher based on the needs of the community of practice. More may be scheduled based on the results of a questionnaire and two pre-assessment surveys completed to determine study participant needs. The meetings will be synchronous and may take place online or in person, depending on participant availability and are intended to provide participants with the opportunity to interact/engage with other members of the community. As community discussion evolves around personalized learning, participants will be asked to develop a strategy and action research-based plan for implementing personalized learning in their own classrooms. Study members will also be asked to submit reflections on meetings/discussions as well as complete a post-assessment survey and follow-up interview.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

There are minimal risks associated with participating in this study. Participants may experience a loss of time as they participate in the professional development portion of the study, as well as during interviews or survey completion.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

You will not get any personal benefit from taking part in this study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in this study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

When we write about or share the results from the study, we will write about the combined information. We will keep your name and other identifying information private.

CAN YOU CHOOSE TO WITHDRAW FROM THE STUDY EARLY?

You can choose to leave the study at any time. You will not be treated differently if you decide to stop taking part in the study. If you choose to leave the study early, data collected until that point will remain in the study database and may not be removed.

The investigators conducting the study may need to remove you from the study This may occur for a number of reasons. You may be removed from the study if you are not able to answer the questions, if they find that your participation in the study is more risk than benefit to you, or if technology malfunctions and your data are lost.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will not receive any rewards or payment for taking part in the study.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?

You will be informed if the investigators learn new information that could change your mind about staying in the study. You may be asked to sign a new informed consent form if the information is provided to you after you have joined the study.

WILL YOU BE GIVEN INDIVIDUAL RESULTS FROM THE RESEARCH TESTS/SURVEYS?

You will be invited to review the initial data analysis and give feedback on the interpretation of results. This process is known as member checking. You will be able to review your survey results, the interview transcripts, and the themes that emerge from the analysis of the data. You will be encouraged to provide any feedback you have to help the research process.

WHAT ELSE DO YOU NEED TO KNOW?

There is a possibility that the data collected from you may be shared with other investigators in the future. If that is the case, none of the data shared will include personally identifiable information, unless you give your consent of the UK Institutional Review Board (IRB) approves the research. The IRB is a committee that reviews ethical issues, according to federal, state and local regulations on research with human subjects, to make sure the study complies with these before approval of a research study is issued.

FUTURE USE OF YOUR INFORMATION:

The information collected in this study will be kept private. Only the researcher will have access to the raw data, which will be stored on a password protected, encrypted computer. Prior to sharing any results all names will be de-identified. When the study is published pseudonyms will be used for both the name of the school as well as the study participants. Any audio recordings of interviews will only be accessible to the researcher and recordings will be destroyed after the dissertation is published

INFORMED CONSENT SIGNATURE PAGE

You are a participant or are authorized to act on behalf of the participant. This consent includes the following:

- **Key Information Page**
- **Detailed Consent**

You will receive a copy of this consent form after it has been signed.

_____ _____

Signature of research subject *or, if applicable,* **Date**
**research subject's legal representative*

_____

Printed name of research subject *and, if applicable,*

_____

**Printed name of research subject's legal representative*

**If applicable, please explain Representative's relationship to subject and include a description of representative's authority to act on behalf of subject:*

_____

_____

_____ _____

Printed name of [authorized] person obtaining informed consent Date

_____

Signature of Principal Investigator or Sub/Co-Investigator

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Professional Experience

Learning and Innovation Officer Kamehameha Schools, Maui, Hawai‘i	2018 – Present
Sr. Instructional Technology Specialist Kamehameha Schools, Maui, Hawai‘i	2011 – 2018
Distance Learning Instructor Kamehameha Schools, Honolulu, Hawai’i	2005 – 2011
Teacher Kamehameha Schools, Maui, Hawai’i	2001 – 2005
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Professional Honors and Awards

Blackboard Exemplary Course Winner	2008, 2009, 2011
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